



PJM Manual for
Installed Capacity: Generation Data Systems
Manual M-18

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PJM Manual for
Installed Capacity: Generation Data Systems

Table of Contents

Revision History

<i>Approval</i>	REV-1
<i>Revision History</i>	REV-1

Introduction

<i>About PJM Manuals</i>	INT-1
<i>About This Manual</i>	INT-2
Target Users	INT-2
References	INT-2
<i>Using This Manual</i>	INT-4
What You'll Find In This Manual	INT-4

Section 1: Overview

<i>Overview of Generation Data Systems</i>	1-1
Availability Data	1-1
Capability Data	1-2
Daily Actual Data	1-2

Section 2: Generating Availability Data System (GADS)

<i>GADS Overview</i>	2-1
<i>GADS Data Requirements</i>	2-2
<i>GADS Functionality</i>	2-3
Single-Record Editing & Viewing	2-3
Bulk Data Transfer	2-4
Data Checks	2-5
GADS Reports	2-5

Section 3: Generator Unavailability Data (GUS, GORP)

<i>GUS/GORP Overview</i>	3-1
<i>GUS/GORP Data Requirements</i>	3-2
<i>GORP</i>	3-3
Data Preparation	3-3
Calculations	3-3
GORP Reports	3-3
<i>GUS Reports</i>	3-5
Supplemental Agreement Outage Data Report.....	3-5

Section 4: Generating Capability Data (Green Book, NETCAPVR)

<i>Overview</i>	4-1
<i>Data Requirements</i>	4-2
<i>Procedure</i>	4-3
<i>Notification of Changes</i>	4-4

Section 5: Actual Daily Reporting for Accounting

<i>Daily Unavailable Capacity Data</i>	5-1
<i>Daily Limited Energy Data</i>	5-2

Attachment A: Definitions & Abbreviations

Attachment B: Procedure for Installed Capacity Changes

Exhibit I:1: List of PJM Manuals INT-1
Exhibit 2.1: GADS Display Hierarchy 2-3
Exhibit B.1: Request For Network Integration Service Associated With An Installed Capacity
Change Request - Page 1 of 2..... B-3
Exhibit B.1: Request For Network Integration Service Associated With An Installed Capacity
Change Request - Page 2 of 2..... B-4
Exhibit B.2: Service Agreement For Network Integration Transmission Service - Page 1 of 5
..... B-6
Exhibit B.2: Service Agreement For Network Integration Transmission Service - Page 2 of 5
..... B-7
Exhibit B.2: Service Agreement For Network Integration Transmission Service - Page 3 of 5
..... B-8
Exhibit B.2: Service Agreement For Network Integration Transmission Service - Page 4 of 5
..... B-9
Exhibit B.2: Service Agreement For Network Integration Transmission Service - Page 5 of 5
..... B-10

Revision History

Approval

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Robert O. Hinkel, Manager

Capacity and Adequacy Planning Department

Revision History

Revision 01 (10/20/97)

Added section “Reconciliation of Conflicting Claims” to end of Attachment B Procedure for Installed Capacity Changes with the following text:

In accordance with Article VIII, Section 8.4 a) and Article X, Section 10.1 d) of the Operating Agreement of PJM Interconnection, L.L.C. , Attachment F of the PJM Open Access Transmission Tariff and the PJM Manual for Installed Capacity: Generation Data Systems, the following outlines the procedures that the PJM staff will utilize when a conflict is identified regarding claims for installed capacity credit. Three scenarios have been identified where reconciliation of conflicting claims will be required. These are:

- Generation resources not previously included in any member’s installed capacity re claimed or transacted for by two or more companies.
- Generation resources in a Company’s installed capacity through ownership or contractual arrangement are claimed or transacted for by another Company and contested by the first Company.
- Parties transacting capacity disagree on the transaction start/end dates or the contract capacity magnitude.

(1) Generation resources not previously included in any member’s installed capacity are claimed or transacted for by two or more companies.

- Written notice will be given by the PJM OI to the Claimants of Conflict via facsimile delivery as soon as the conflict is noticed. This notice will be followed by a hard-copy mailed on the same day as facsimile transmission.
- The PJM OI will facilitate any discussion and/or meetings to resolve the matter within five (5) working days of the initial notice to the parties involved.

- If the issue is not resolved through these facilitated discussions, the matter will be submitted to the Dispute Resolution Process.
- Installed Capacity billing relevant to the disagreement will be suspended until after the resolution process has been completed. An estimate of possible billing could be rendered to assist in the resolution process if requested.
- Changes to System Installed Capacity will be as of the date of the settlement. There will be no retroactive changes to the System Installed Capacity. Monetary redress, if applicable, should be discussed between the parties involved as part of the Dispute Resolution Process.

(2) Generation resources in a Company's installed capacity through ownership or contractual arrangement are claimed or transacted for by another Company and contested by the first Company.

- The previously approved capacity remains with the party having the prior claim to the resource.
- Written notice will be given by the PJM OI to the Claimants of Conflict via facsimile delivery as soon as the conflict is noticed. This notice will be followed by a hard-copy mailed on the same day as facsimile transmission.
- The PJM OI will facilitate any discussion and/or meetings to resolve the matter within five (5) working days of the initial notice to the parties involved.
- If the issue is not resolved through these facilitated discussions, the matter will be submitted to the Dispute Resolution Process.
- Installed Capacity billing relevant to the disagreement will be suspended until after the resolution process has been completed. An estimate of possible billing could ~~will~~ be rendered to assist in the resolution process if requested.
- The party with the later claim to the resource must pay an amount equal to the deficiency charge with which the OI will secure excess capacity within the pool until the dispute is resolved. The winner of the dispute will receive credit for the contested capacity resource; the loser of the dispute will be responsible for the deficiency charge. This ensures that the total required capacity is still available to the pool during the dispute process to insure reliability.
- Changes to System Installed Capacity will be as of the date of the settlement. There will be no retroactive changes to the System Installed Capacity. Monetary redress, if applicable, should be discussed between the parties involved as part of the Dispute Resolution Process. As part of the Dispute Resolution Process, monetary redress should consider, among other things, expenses incurred by the parties (e.g. time and materials) as well as the cost of the arbitration process.

(3) Parties transacting capacity disagree on the transaction start/end dates or the contract capacity magnitude.

- Written notice will be given by the PJM OI to the Claimants of Conflict via facsimile delivery as soon as the conflict is noticed. This notice will be followed by a hard-copy mailed on the same day as facsimile transmission.

- The PJM OI will facilitate any discussion and/or meetings to resolve the matter within five (5) working days of the initial notice to the parties involved.
- If the issue is not resolved through these facilitated discussions, the matter will be submitted to the Dispute Resolution Process.
- No changes to the Installed Capacity of either party will be made until the Dispute Resolution Process has been completed.
- Changes to System Installed Capacity will be as of the date of the settlement. There will be no retroactive changes to the System Installed Capacity. Monetary redress, if applicable, should be discussed between the parties involved as part of the Dispute Resolution Process.

Revision 00 (07/15/97)

This revision is the complete draft of the *PJM Manual for Installed Capacity: Generation Data Systems*.

Welcome to the *PJM Manual for Installed Capacity: Generation Data Systems*. In this Introduction, you will find the following information:

- What you can expect from the PJM Manuals in general (see “About PJM Manuals”).
- What you can expect from this PJM Manual (see “About This Manual”).
- How to use this manual (see “Using This Manual”).

About PJM Manuals

The PJM Manuals are the instructions, rules, procedures, and guidelines established by the PJM OI for the operation, planning, and accounting requirements of the PJM Control Area and the PJM Interchange Energy Market. Exhibit I.1 lists the PJM Manuals.

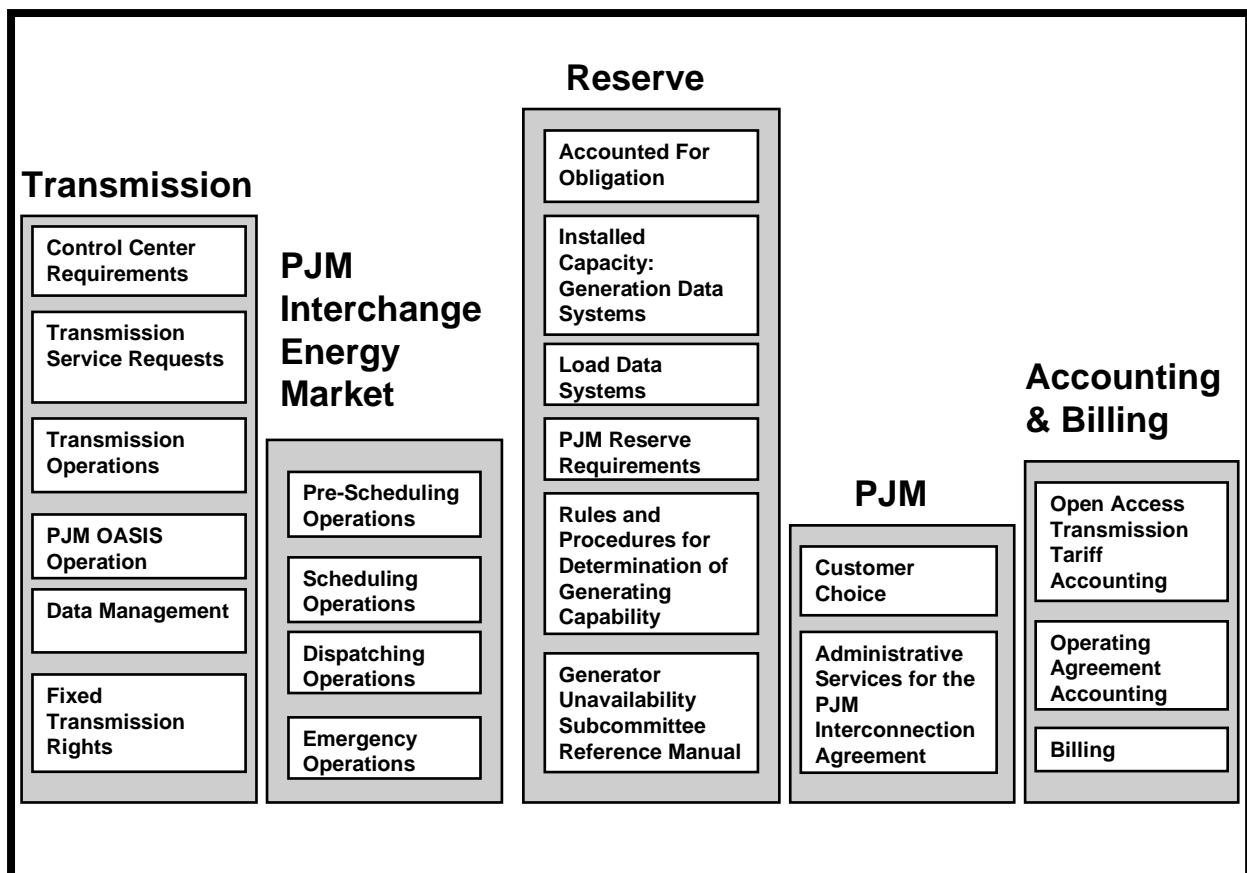


Exhibit I.1: List of PJM Manuals

About This Manual

The *PJM Manual for Installed Capacity: Generation Data Systems* is one of a series of manuals within the Reserve group of manuals. This manual focuses on installed capacity generation data reporting requirements; it does not include operational data reporting requirements. This manual describes the data input requirements, the processing performed on the data, computer programs involved in processing the data, and the reports that are produced.

The *PJM Manual for Installed Capacity: Generation Data Systems* consists of five sections. The sections are as follows:

- Section 1: Overview
- Section 2: Generating Availability Data System (GADS)
- Section 3: Generator Unavailability Data (GUS, GORP)
- Section 4: Generating Capability Data (Green Book, NETCAPVR)
- Section 5: Actual Daily Reporting for Accounting

Target Users

The target users for the *PJM Manual for Installed Capacity: Generation Data Systems* are:

- *LSE planning engineers* — The LSE planning engineers are responsible for supplying generation data in the required format and for performing input data verification.
- *PJM OI* — The PJM OI engineers are responsible for the calculation and submittal of the forecast obligations to the Planning and Engineering (P&E) Committee for approval.
- *P&E Committee members* — The P&E Committee members are responsible for the administration and approval of the forecast obligation and techniques for its determination.

References

There are several references to other documents that provide background or additional detail. The *PJM Manual for Installed Capacity: Generation Data Systems* does not replace any information in these reference documents. The following documents are the primary source of specific requirements and implementation details:

- *PJM Manual for Reserve Requirements*
- *PJM Manual for Forecast Obligation*
- *PJM Manual for Accounted-For Obligation*
- GADS User Guide
- GADS Programmer's Manual
- Generating Outage Data Reporting Instructions

- GUS Reference Manual
- GORP User's Guide
- Rules and Procedures for Determination of Generating Capabilities (Green Book)
- GCRPTF Data Acquisition Program (NETCAPVR) — Data Format (Letter from Rick Kim, dated August 16, 1996)
- Unavailable Data Input Procedure
- Limited Energy Data Input Procedure

Using This Manual

Because we believe that explaining concepts is just as important as presenting the procedures, we start each section with the “big picture”. Then, we present details and procedures. This philosophy is reflected in the way we organize the material in this manual. The following paragraphs provide an orientation to the manual’s structure.

What You’ll Find In This Manual

- A table of contents
- An approval page that lists the required approvals and the revision history
- This introduction
- Sections containing the specific guidelines, requirements, or procedures including PJM OI actions and PJM Members actions
- List of terms used in the PJM Manual
- Attachments that include additional supporting documents, forms, or tables in this PJM Manual

Section 1: Overview

Welcome to the *Overview* section of the *PJM Manual for Installed Capacity: Generation Data Systems*. In this section you will find the following information:

- An overview of the primary data flow paths for generation data (see “*Overview of Generation Data Systems*”).

Overview of Generation Data Systems

The generation data systems include the Generating Availability Data System (GADS), the Generation Outage Rate Program (GORP), the Net Capability Verification Report (NETCAPVR) program, and certain functions of the PJM accounting computer system. To help understand the generation data systems, visualize the data moving along a path with different users adding data, making revisions, or performing some other operation along the path. The three primary data paths are:

- Availability Data
- Capability Data
- Daily Actual Data

Availability Data

The availability data path essentially consists of:

- The LSEs entering individual-unit outage data into the GADS database.
- The LSEs providing capacity, planned outage, and miscellaneous capacity adjustment schedules.
- The PJM OI’s Generator Unavailability Subcommittee (GUS) analyzing the GADS data and schedule data by running the Generator Outage Rate Program (GORP).
- GUS supplying data to the Load and Capacity Subcommittee (L&CS) for use in calculating LSE Forced Outage Rate Adjustments and to the Planning and Engineering (P&E) Committee for approval.

Capability Data

The capability data path essentially consists of :

- the LSEs submitting test or operational data to confirm the summer and winter net capabilities of each unit.
- The PJM OI's Generating Capability Rating Procedures Task Force (GCRPTF) analyzing the results and supplying data to the appropriate PJM committees and subcommittees.

Daily Actual Data

The daily actual data path consists of:

- The LSEs entering daily unavailable capacity data and daily limited energy data into the PJM OI's accounting database.
- The PJM OI using this data in calculating each LSE's Actual Average Weekly Unavailable.

Section 2: Generating Availability Data System (GADS)

Welcome to the *Generating Availability Data System (GADS)* section of the *PJM Manual for Installed Capacity: Generating Data Systems*. In this section you will find the following information:

- An overview of the Generating Availability Data System (see “GADS Overview”).
- A description of the GADS data requirements (see “GADS Data Requirements”).
- A description of the functions available in GADS, including data entry, data checks, data editing, data deleting, data retrieval, and reports (see “GADS Functionality”).

GADS Overview

GADS is a database used for entering, storing, and reporting generating unit data concerning outages, unit performance, and fuel performance. Data is entered and stored on an individual-unit, individual-event basis. Data that is entered by each LSE is accessible only to that LSE and to authorized PJM OI personnel. GADS data is accessible via a variety of GADS reports.

GADS event (outage) data is used by OI to:

- run GORP, which calculates outage rates
- run other programs to prepare data for NERC
- perform special studies

Unit performance data and fuel performance data in the GADS database is used by GUS for NERC reports.

Rules and guidelines for developing GADS data are specified in the *Generating Outage Data Reporting Instructions*; GADS screens and reports are described in the *GADS User Guide*; and details of the GADS program are described in the *GADS Programmer's Guide*.

GADS resides in the PJM OI's IBM mainframe computer, under the VM operating system and CMS user interface. The data is stored in an IDMS relational database. Users at the PJM OI access GADS directly from their PC terminals, and the LSEs access only their own GADS data via an IBM terminal emulator on their PC.

GADS Data Requirements

The GADS data requirements are:

- By the 20th of each month, each LSE must enter the event data for the preceding month and check it to Level 2 (see *Data Checks* below). All events requiring a reduction of one megawatt or more must be reported.
- By the 20th of each month, each LSE enters the generator performance data for the preceding month.
- By the 20th of each month, each LSE enters the fuel performance data for the preceding month.
- The operating company enters data for jointly-owned units.
- The operating company must provide the pedigree data (design data) for new units to the PJM OI. Paper forms are used for submitting this data. The PJM OI then sets up GADS to allow entry of the periodic data electronically, as described above. The pedigree data is also sent to NERC.

GADS Functionality

GADS is a menu-driven computer program, allowing you to navigate through a series of menus until the desired screen is displayed. The hierarchy of screens is shown in Exhibit 2.1.

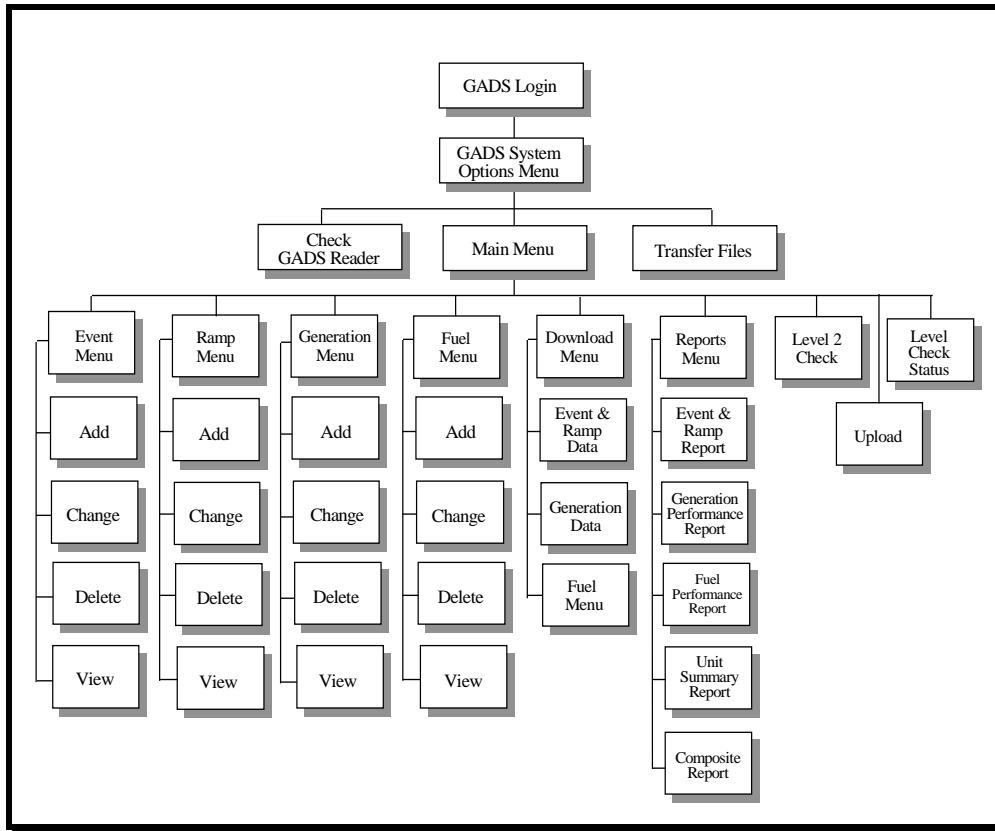


Exhibit 2.1: GADS Display Hierarchy

The functions available in GADS can be grouped into the following classifications: single-record editing and viewing, bulk data transfers, data checks, and reports. Each of these functions is discussed in this section.

Single-Record Editing & Viewing

Single-record editing and viewing allows you to add, edit, delete, and view individual data records, such as the data for a single outage of a generating unit.

The types of records are: events (outages), post-event ramps, generator performance, and fuel performance.

- *Events (Outages)* — Event records each describe a single outage of a generating unit, including such information as event type, IO information code, available capability, start

date/time, end date/time, and verbal description. Event data is accessed via the Event Menu.

- *Post-Event Ramps* — Ramp records describe the sequence of load increases and holds as a unit is brought back up after an outage; up to 12 segments can be entered. Each ramp record is associated with a particular event. Ramp records are required for nuclear units and are optional for other types of units. Ramp data is accessed via the Ramp Menu.
- *Generator Performance* — Generator performance records each describe the performance of a unit during one month, including such data as maximum capacity, net actual generation, unit service hours, and reserve shutdown hours. Generator performance data is accessed via the Generation Menu.
- *Fuel Performance* — Fuel performance records each describe the characteristics of the fuels used in a generating unit during one month, including such data as fuel type, quantity burned, heat content, and % sulfur. Fuel performance data is accessed via the Fuel Menu.

Details of the data that must be entered and the data formats are described in *the GADS User Guide* and the *Generating Outage Data Reporting Instructions*.

Bulk Data Transfer

In addition to interactive single-record functions, you can add, edit, delete, and check multiple records using bulk data transfers and batch processing. Bulk data can be uploaded from your PC to the GADS database. Conversely, data can be downloaded from the GADS database to your PC.

Data Upload

To upload data, you first must build a file of 80-column card images in GADS format. These “cards” can be for adding, editing, deleting, or requesting checks on records. After the file is built, it must be transferred to the CMS file named GADSUP DATA A. Then you select “Upload” from the GADS main menu.

The GADS system checks for duplicate records, does Level 1 error checks (see *Data Checks*, below), processes the requests contained in your uploaded file, and sends the error report to the CMS Reader by the next morning. You then use the Transfer Files option of the GADS System Options menu to view or download the error report to your PC.

Data Download

You can download data from the GADS database to your PC by selecting “Download “ from the GADS Main Menu, selecting the types of data desired (Event/Ramp Data, Generator

Performance Data, Fuel Performance Data), and specifying the constraints (such as the units to be included, the start date/time, and the end date/time).

The requested data is retrieved from the GADS database and stored in the CMS file named GADSDOWN DATA A. This file is then available for viewing under CMS or transferring to your PC for further analysis and reporting, using the Transfer Files option of the GADS System Options menu.

Data Checks

GADS performs several levels of checks on the GADS data to minimize errors:

- Level 1 data checks are automatically performed upon data submission, whether via single-record editing or bulk data transfer. Data range and format are checked. These checks must be successfully completed before the data is entered into the database. If errors are detected, error messages are provided interactively during single-record editing, and an error report is provided for bulk data uploads. An explanation of the Level 1 error messages is provided in Appendix 1 of the GADS User Manual.
- Level 2 data checks are manually initiated by the LSE or the PJM OI via the GADS Main Menu. These are detailed database integrity checks - up to 33 checks, depending on the type of data. A batch program is submitted to perform the checks, and an error report is sent to the requester's CMS Reader. An explanation of the Level 2 error messages is provided in Appendix 5 of the GADS User Manual.
- Level 3 checks are performed by PJM OI staff after Level 2 checks are successfully completed. These are checks to verify that the GADS data agrees with the outage tickets filled out by the PJM OI dispatchers. Although the GADS manuals indicate that the Level 3 checks are computerized, they are not.
- The "Level Check Status" function on the GADS Main Menu allows you to determine whether the Level 1, 2, and 3 checks have been successfully completed for your GADS data and for the data submitted by the other LSEs.

GADS Reports

The GADS program produces five pre-defined reports; or you can download GADS data to your PC and create your own reports. Each LSE is permitted only one pre-defined report per day.

Reports are requested via the GADS menu system. GADS then submits a batch job, and the report is sent to the requester's CMS Reader, which can then be viewed or printed.

- *Event and Ramp Data Report* — Includes selected event and ramp data for the specified time period.

- *Generation Performance Report* — Includes selected generation performance data for the specified months.
- *Fuel Performance Report* — Includes selected fuel data for the specified months.
- *Composite Report* — Includes event, generation performance, and fuel performance data for the current year to date or a selected previous year.
- *Unit Summary Report* — Includes quarterly and year-to-date statistics for selected units and years. Capacity data, generation data, number of starts, hours in various operating states, and calculated factors (NCF, EFOR, etc.) are provided.

A detailed description of the reports, and sample reports, are provided in the GADS User Guide.

Section 3: Generator Unavailability Data (GUS, GORP)

Welcome to the *Generator Unavailability Data (GUS, GORP)* section of the *PJM Manual for Installed Capacity: Generation Data Systems*. In this section you will find the following information:

- An overview of the generator unavailability data process (see “GUS/GORP Overview”).
- A description of the unavailability data requirements (see “GUS/GORP Data Requirements”).
- A description of the Generation Outage Rate Program (see “GORP”).
- A description of the reports produced by the Generator Unavailability Subcommittee (see “GUS Reports”).

GUS/GORP Overview

GUS uses GORP to compute individual unit outage rates and the average equivalent forced outage rate (EFOR) of each LSE, using information in the GADS database. The EFORs are used by PJM’s Load and Capacity Subcommittee to compute each LSE’s Forced Outage Rate Adjustment (F), as described in the *PJM Manual for Forecast Obligation*.

After all checks have been run on the GADS database, GORP is run; GUS provides a preliminary report to the LSEs; and GUS makes any adjustments needed as a result of the feedback from the LSEs and notifies the affected LSEs of the changes that are made.

The calculations performed by GORP, the reports prepared by GUS, and the responsibilities of GUS are highlighted in the following sections; you can find more detail in the *GUS Reference Manual*. The inputs, outputs, and data formats of the GORP program are described in the *GORP User’s Guide*.

GUS/GORP Data Requirements

In addition to the GADS data discussed earlier in this manual, each LSE must provide the following information to the PJM OI coordinator:

- A preliminary capacity forecast for the next ten planning periods by February 1.
- A schedule of planned and maintenance outages for the next ten planning periods by February 1. See the *PJM Manual for Pre-scheduling Operations* for more details.
- A forecast of miscellaneous capacity adjustments for the next ten planning periods by March 10. (This is done via the LSEs GUS representative.)

After this initial submittal of data, several iterations of data submittal and review take place before the forecast allocations are finalized. The P&E Committee provides a schedule of these activities each year. The dates change slightly from year to year.

GORP

GORP is a computer program that runs on the PJM OI's IBM mainframe computer, under the VM operating system and CMS user interface. It consists of three major subprograms — EDIT, MAIN, and EFOR, each of which is described below. GUS uses corporate computer terminal PCs to specify program control parameters that determine which calculations are performed and which reports are generated.

Data Preparation

The EDIT portion of GORP reads data from the GADS database, and reformats and reorganizes the data for more efficient processing by the MAIN program.

Calculations

The MAIN program processes user input control cards which define the scope and desired output for a given GORP run. The user specifies:

- the units to be grouped together for calculations and reports,
- the history period to include,
- the statistics desired
- the types of reports desired

The files previously produced by the EDIT program are then processed to accumulate outage data into the various groupings defined by the user. After accumulating the outage data, the program calculates the various rates and other statistics in accordance with the user-defined specifications for this run. The desired reports are then produced.

GORP performs complex calculations and statistical analysis; as a result, a typical run takes several hours. GORP calculates individual unit outage rates, average equivalent forced outage rate (EFOR) of each LSE ("F" in the LSE Forecast Obligation formula) for previous planning periods, forecast EFOR of each LSE for future planning periods, and other factors needed by GUS for its reports and studies. The calculations performed by GORP are described in the *GUS Reference Manual*.

GORP Reports

The following reports are produced by GORP:

- *Unit Summary Report* — Provides outage rates and related data for individual units or groups of units.

- *Cause Code Component Outage Rate Report* — Categorizes the information in the Unit Summary Report according to equipment components. This report is useful in determining problem areas for specific units.
- *Probability of Unit Partial Outage State Report* — Categorizes partial-outage events into ten partial-outage states representing reductions in unit capacity. Each state represents ten percent of the unit's full load capacity. This information, along with data for the 100% available and 100% forced out states, is used to calculate the capacity variance of each unit for use in reliability studies.
- *I.O. Code Component Outage Rate Report* — Summarizes the forced and maintenance outage event information into classifications defined by the postponability of the outages.
- *Unit Variance and Partial Outage State Report* — Shows the effective forced outage rate, scheduled outage factor, and capacity variance values required for the Planning Study Outage Data Report (described below). Also, the outage state summary in this report shows all of the capacity state values used to calculate the capacity variance. Of the 101 potential outage states, only those with values are included.

GUS Reports

Using the data produced by GORP plus the additional data described in the Data Requirements section above, GUS produces the following reports:

Supplemental Agreement Outage Data Report

- (1) *Preliminary Report* — Contains the weighted average equivalent demand forced outage rate and the total unavailable capacity due to planned and maintenance outages summarized by LSE for ten consecutive planning periods starting June 1 of the current year. This report is based on the latest three years of operating experience, excluding I.O. code 9 outages (routinely-occurring off-peak outages).

The Preliminary Supplemental Agreement Outage Data Report consists of a cover letter and Tables I (LSE Average Equivalent Forced Outage Rates), IA (LSE Average Forced Unavailable Capacity), and II (LSE Average Planned and Maintenance Unavailable Capacity).

By approximately April 1, GUS provides this report to the PJM P&E Committee and to the LSEs (via their GUS member). By two weeks after the report is sent, each LSE must provide a further breakdown of the data (explaining major changes, outages, etc.) and send it to each GUS member. GUS then forwards this information to the P&E Committee.

- (2) *Final Report* — The Supplemental Agreement Outage Data Report is the primary source of information for developing the Forced Outage Rate Adjustments used in computing each LSE's forecast obligation. This report contains individual-unit equivalent demand forced outage rates, weighted average equivalent demand forced outage rates, average unavailable capacity due to forced outages, and the average unavailable capacity due to forced and maintenance outages, all summarized by the LSEs for ten consecutive planning periods starting June 1 of the current year. This report is based on the latest three years of operating experience, excluding I.O. code 9 outages (routinely-occurring off-peak outages).

The Supplemental Agreement Outage Data Report consists of a cover letter, Tables I (LSE Average Equivalent Forced Outage Rates), IA (LSE Average Forced Unavailable Capacity), II (LSE Average Planned and Maintenance Unavailable Capacity), III (Effective Equivalent Outage Data for Classes of Future Units), IV (Individual Unit Equivalent Demand Forced Outage Rates for Existing and Future Capacity), and V (Capacity Allocation of PJM Units with Multiple LSE Ownerships), and four appendices explaining the data in the report. Tables I, IA, and II are updated versions of those in the Preliminary Supplemental Agreement Outage Data Report.

Table III, Effective Equivalent Outage Data for Classes of Future Units, is prepared by GUS based on the past three years of outage data. It shows the outage rates that will be used for future units in computing LSE Forecast Obligations.

By June 1, GUS provides the Supplemental Agreement Outage Data Report to the PJM P&E Committee, the LSEs (via their GUS member), and the Load and Capacity Task Force (L&CTF). The L&CTF uses this data in calculating the Forced Outage Rate Adjustment for each LSE.

- *Planning Study Outage Data Report* — Provides effective equivalent demand forced outage rates, capacity variances, and scheduled outage data for all existing and future units included in the latest capacity schedule of each LSE. This report is based on the latest five full years of operating experience, excluding I.O. code 9 outages (routinely-occurring off-peak outages).

The Planning Study Outage Data Report consists of a cover letter, textual description, and Tables I (Existing Units with 5 Calendar Years of Data), IIa (Existing Units with Less Than 5 Years of Data), IIb (Future Units), III (Effective Equivalent Outage Data for Classes of Future Units), and IV (Forced and Scheduled Outage Data Components for Existing and Future Capacity).

By October 15, each LSE must provide Table 1 to the GUS chairperson. Instructions for preparing this table are provided in the *GUS Reference Manual*.

By approximately November 1, GUS sends the report to the P&E Committee with preliminary Tables IIa and IIb. By February 15, the final version of these tables is provided. The P&E Committee uses the report in the annual reliability analysis described in the *PJM Manual for PJM Reserve Requirements*.

- *Adequacy and Reliability Assessment Report* — GUS provides two tables for the Adequacy and Reliability Report compiled by the P&E Committee, which also gets material for the report from other PJM OI work groups. This report is prepared annually to assess the PJM OI's performance.

One table prepared by GUS is titled "PJM Unavailable Capacity at Peak Hour for Selected Heavy Load Days and Times". GUS selects heavy load days and times, and gathers the required data from that Unavailable Capacity Data provided by the LSEs as described in Section 6 of this manual.

The other table that is prepared by GUS is titled "PJM Internal Capacity and Reserves at Peak Hour for Selected Heavy Load Days". GUS prepares this table for the same heavy load days as are used for the "PJM Unavailable Capacity at Peak Hour for Selected Heavy Load Days and Times" table.

- Additional reports as required or requested by the PJM OI or P&E.

Section 4: Generating Capability Data (Green Book, NETCAPVR)

Welcome to the *Generating Capability Data* section of the *PJM Manual for Installed Capacity: Generation Data Systems*. In this section you will find the following information:

- An overview of the generating capability data process (see “Overview”).
- A description of the generating capability data requirements (see “Data Requirements”).
- A description of the procedure for verifying the net capability (see “Procedure”).
- The requirements for notifying PJM OI of changes in net capability (see “Notification of Changes”).

Overview

The PJM OI’s Generating Capability Rating Procedures Task Force (GCRPTF) is responsible for defining the *Rules and Procedures for Determination of Generating Capability (Green Book)* and monitoring the generating capability of the generating units. The Green Book describes how to calculate Summer Net Capability, Winter Net Capability, and Available Capability of individual generating units and of a system. The type of unit, transmission limitations, limited energy resources, and other factors are taken into account.

The LSEs must annually prove the winter and summer net capability of each generating unit. Data may be submitted electronically via the computer program NETCAPVR (Net Capacity Verification Report) or on paper forms. The generating capabilities are used by the P&E Committee to forecast the Diversified Planning Period Peak, which is used in the LSE Forecast Obligation calculation.

Data Requirements

The generating capability data requirements are:

- By March 31, each LSE must provide a Net Capability Verification Report for the Winter period for each unit in its system and a Capability Verification Report Summary. These reports are described in detail in the Green Book. Net Capability Verification Reports can be submitted on paper or as DBASE IV files, using the NETCAPVR program described in the NETCAPVR letter shown in the reference list in this manual. NETCAPVR runs on the LSE's PC.
- By September 30, each LSE must provide a Net Capability Verification Report for the Summer period for each unit in its system and a Capability Verification Report Summary.
- The Capacity Schedule, Planned and Maintenance Outage Schedule, and Miscellaneous Capacity Adjustments Schedule must be provided, as described in Section 3 of this manual.

Procedure

The following paragraphs describe the procedure for verifying and reporting the winter and summer net capability of a generating unit:

- The winter and summer net capability of a unit can be proven by using operational data from normal plant operation or by running a test, at the LSE's discretion; however, the GCRPTF may request that a test be run. A twelve-hour run during the Summer and Winter verification windows at the claimed capability is required. If a test is initially unsuccessful, it can be re-run up to two more times during the verification window to verify the claimed capability. After three failures, a capacity reduction from the beginning of the Planning Period must be taken.
- The Net Capability Verification Reports and Capability Verification Summary Reports submitted by the LSE's must be reviewed and approved by the GCRPTF.
- The GCRPTF sends a report of capacity changes to the PJM OI Operating Committee.
- For approved capacity changes, the LSE must write a letter to the President of the PJM OI, as described in the Notification of Changes section below.
- After each verification period, the GCRPTF prepares the following reports for the Generation Subcommittee:
 - (1) Non-Compliant Units for Three Consecutive Summer Periods
 - (2) Non-Tested Units During The Summer (Winter) (Year) Period
 - (3) Commercial/Retired Units during the Summer (Winter) (Year) Period
 - (4) Unit Re-rating During the Summer (Winter) (Year) Period.

Notification of Changes

Changes to installed capacity must be submitted as Network Integrated Transmission Service Requests by the properly authorized representative of the LSE to the PJM OI Transmission Service Request Administrator, in accordance with the PJM Tariff and using procedures and forms identified on the OASIS. Copies of the procedures and forms are provided in Attachment B.

Notice may be by mail or facsimile, with copies to the other Operating Committee members, and is accompanied by telephone notification to the PJM OI accounting person and, if required due to time constraints, to the PJM OI dispatcher.

Changes to joint-owned facilities or LSE-to-LSE transactions require specific notification from all PJM owners.

No retroactive changes are permitted.

Section 5: Actual Daily Reporting for Accounting

Welcome to the *Actual Daily Reporting for Accounting* section of the *PJM Manual for Installed Capacity: Generation Data Systems*. In this section you will find the following information:

- A description of the Daily Unavailable Capacity Data reporting requirements (see “Daily Unavailable Capacity Data”).
- A description of the Daily Limited Energy Data reporting requirements (See “Daily Limited Energy Data”).

Daily Unavailable Capacity Data

By the 20th of each month, each LSE must enter the Unavailable Capacity data for hours 9 through 22 of each weekday of the previous month, excluding holidays, into the accounting system on the PJM OI mainframe. Under CMS, the LSE accesses the Accounting Menu and enters the data using the Unavailable Data Input screens.

Instructions for accessing and using the menus and data input screens are provided in the *Unavailable Data Input Procedure* shown in the References list in this manual. The special reporting requirements for the jointly-owned Keystone and Conemaugh plants also are described in the reference.

The PJM OI uses this unavailable capacity data to calculate the Actual Average Weekly Unavailable Capacity, which is used in the Accounted-For Obligation calculations described in the *PJM Manual for Accounted-For Obligation*.

Daily Limited Energy Data

Whenever a generating unit is incapable of generating up to its claimed capability due to limitations on available energy, such as fuel shortages or low river flow, certain data must be reported to the PJM OI. By the last working day of each month, each LSE must enter the limited energy data described below for each weekday of the previous month, excluding holidays, into the PJM accounting system computer.

Under CMS, the LSE engineer accesses the Accounting Menu and enters the data using the Limited Energy Data Input screens. Instructions for accessing and using the menus and data input screens are provided in the *Limited Energy Data Procedure* shown in the *References* list in this manual. The special reporting requirements for Susquehanna River flow also are described in the reference.

The following types of Limited Energy Data must be entered:

- hydro unavailability
- pumping hours foregone due to other outages
- normal and emergency weekly non-hydro limited energy
- number of pumps outaged
- Susquehanna River flow

The PJM OI uses this data to calculate the Actual Average Weekly Unavailable Capacity, which is used in the Accounted-For Obligation calculations.

Attachment A: Definitions & Abbreviations

For purposes of this Manual, the following definitions and abbreviations shall be used:

Access — Eligible Load

Retail load anticipated to participate in a state-administered retail access program and the wholesale load for which there is no contractual commitment.

ACE

Area Control Error of the PJM Control Area is the actual net interchange minus the biased scheduled net interchange.

Accounted-For Account

One of two accounts for which installed capacity payments are made. Adjustments are made to each LSE's forecast obligation for differences between actual and forecast conditions. These adjustment can result in purchases and sales of installed Capacity.

Accounted-For Deficiency

The amount by which an LSE's Accounted-For Obligation exceeds its actual contract Capacity.

Accounted-For Excess

The amount by which an LSE's actual contract Capacity exceeds its Accounted-For Obligation.

Accounted for Obligation

The Accounted for Obligation for each Party is equal to the Forecast LSE Obligation for a Planning Period, plus adjustments for actual conditions and ALM credits.

Active Load Management (ALM)

Active Load Management applies to interruptible customers whose load can be interrupted at the request of the PJM OI. Such PJM OI request is considered an Emergency action and is implemented prior to a voltage reduction.

ALM Credit

A credit applied to the LSE forecast or accounted-for obligation from the implementation of LSE active load management programs under the direction of the PJM OI. The initiation of ALM is considered an emergency action under PJM OI request and is implemented prior to a voltage reduction.

ALM Factor

A factor that is established and changed from time to time by the Planning Committee for use in the determination of credit for ALM.

ALM LCC

A Party's ALM Load Carrying Capability value which represents the increase in the peak load carrying capability in the PJM Control Area due to the ALM provided by that Party.

Adjusted Planned Purchase

The amount by which the smaller of an LSE's planned or actual system capacity is deficient in comparison with its forecast obligation.

Adjusted Primary (Calculated)

Adjusted Spinning, plus the Quick-Start Reserve total, minus Non-Capacity Interchange Purchases

- This adjusts the Primary Reserve value by applying a factor to the non-Hydro Quick-Start total to account for the possible failure of equipment to start and by including the possible reduction in Non-Capacity Interchange.

Adjusted Spinning (Calculated)

Summation of the Spinning Reserve total, Non-Capacity Interchange Sales, and the A.C.E.

- This accounts for deficiencies or excesses of energy which are present at the time of the IRC.

Affiliate

- Any two or more entities, one of which *controls* the other or that are under common control.
- Any generation and transmission cooperative and one of its cooperative members.
- Any joint municipal agency and one of its members.

Control means the possession of the power to direct the management or policies of an entity. Ownership of publicly-traded securities of another entity does not result in control or affiliation for purposes of the Interconnection Agreement if the securities are held as an investment, are less than 10 percent of the outstanding securities, there is no representation on the entity's board of directors or vice versa, and the holder does not exercise influence over day-to-day management decisions. Representative of state or Federal government agencies are not deemed affiliates of each other and a regulatory agency will not be deemed

to be in control over any PJM Participant. Control will be presumed to arise from the ownership of or the power to vote, directly or indirectly, 10 percent or more of the voting securities of an entity.

Affiliate Group

A group of signatories to the Operating Agreement of PJM Interconnection, L.L.C. treated collectively as a single PJM Participant.

Agent

An entity appointed by a PJM Member to act in their stead on the Market Administrative Committee.

Agreement

The Operating Agreement of PJM Interconnection, L.L.C., dated March 28, 1997, together with its schedules.

Ancillary Services

Those services that are necessary to support the transmission of Capacity and energy from resources to loads, while maintaining reliable operation of the Transmission Provider's Transmission System in accordance with Good Utility Practice.

Annual Transmission Costs

The total annual cost of the Transmission System for purposes of Network Integration Transmission Service is the amount specified in the Tariff for each Zone until amended by the applicable RTO or modified by the Commission.

Applicant

An entity that desires to become a PJM Participant under the Agreement.

Application

A request by an Eligible Customer for transmission service pursuant to the provisions of the Tariff.

Area Regulation

Signal generated by the PJM OI control center and sent to the LSEs or other controllable entities to change generation quickly to keep PJM's area control error within allowable limits.

- *Slow (ARA)* — That regulating mode under automatic control wherein the company regulating signal is computed for regulating slow responding units (that is, response rates of 5 MW/minute or less).
- *Fast (ARB)* — That regulating mode under automatic control computed for relatively fast responding units (that is, response rates greater than 5 MW/minute). This mode is generally used for hydro and combustion turbine (CT) units.

Available Transfer Capability (ATC)

The amount of energy above “base case” conditions that can be transferred reliably from one area to another over all transmission facilities without violating any pre- or post-contingency criteria for the facilities in the PJM Control Area under specified system conditions. ATC is the First Contingency Incremental Transfer Capability (FCITC) reduced by applicable margins.

Base Case Conditions for Firm ATC

Power flow base case modeling that reflects all transactions of transmission customers holding firm reservations from the PJM OI, known firm transactions that are scheduled between control areas other than PJM, and transfers used to model the Capacity Benefit Margin.

Base Case Conditions (BCC) for Non-Firm ATC

Power flow base case modeling which reflects current system conditions at the time of the calculation adjusted to reflect scheduled transactions during the 168 hour period by transmission customers holding firm reservations from the PJM OI, firm transactions that are scheduled between control areas other than PJM, non-firm scheduled transactions, and major facility (generation and transmission) outage schedules during the period.

Bilateral Transaction

An agreement between two entities (one or both being PJM Members) for the sale and delivery of a service.

Black Start Capability

The ability of a generating unit or station to go from a shutdown condition to an operating condition and start delivering power without assistance from the power system.

Bulk Power Electric Supply System

All generating facilities, bulk power reactive facilities, and the high voltage transmission, substation and switching facilities, as well as those underlying lower voltage facilities which affect the capability and reliability of the generating and high voltage facilities, in the PJM Control Area.

Bulk Power Transmission Facilities

Those transmission facilities with nominal operating voltage of 230 kV or greater and such other transmission facilities as may have a material impact on the reliability, security or constrained operation of transmission facilities with a nominal operating voltage of 230 kV or greater.

Calc. Operating Capacity (Calculated)

PJM Load 1, plus total Operating Reserve, plus untelemetered generation and pumping load, minus net tie flow, minus the NY share of Homer City and the CEI share of Seneca.

Capacity

Megawatts of Capacity for both firm energy delivered to load located electrically within the Interconnection and firm energy delivered to the border of the PJM Control Area for receipt by others.

Capacity Emergency Transfer Objective (CETO)

An analysis used to determine the maximum transfer capability needed for a subarea to remain at reliability level if load is lost.

Capacity Resource

Net Capacity from owned (or contacted) generating resources which are designated and committed by a Load Serving Entity to serve its obligation under the Reliability Assurance Agreement.

CB

Circuit Breaker

CETL

Capacity Emergency Transfer Limit

Commission

The Federal Energy Regulatory Commission or the FERC.

Committee

The Management Committee.

Completed Application

An Application that satisfies all of the information and other requirements of the Tariff, including any required deposit.

Contract

An agreement for a seller to supply energy to a buyer for a designated period of time according to Schedules.

Contract Capacity

The number of megawatts of electric power which an LSE has provided to meet its obligations for electric generating capacity.

Constrained Posted Path

Any posted path having an ATC less than or equal to 25 percent of TTC at any time during the preceding 168 hours or for which ATC has been calculated to be less than or equal to 25 percent of TTC for any period during the current hour or the next 168 hours. § 37.6 (defined in FERC Order 889.)

Control Area

An electric power system or combination of electric power systems bounded by interconnection metering and telemetry to which a common generation control scheme is applied in order to:

- match the power output of the generators within the electric power system(s) and energy purchased from entities outside the electric power system(s), with the load within the electric power system(s);
- maintain scheduled interchange with other Control Areas, within the limits of Good Utility Practice;
- maintain the frequency of the electric power system(s) within reasonable limits in accordance with Good Utility Practice and the criteria of the applicable regional reliability council of NERC;
- maintain power flows on Transmission Facilities within appropriate limits to preserve reliability; and
- provide sufficient generating Capacity to maintain Operating Reserves in accordance with Good Utility Practice.

Conversational Monitor System (CMS)

The interactive user interface software for IBM's VM operating system.

CT

Combustion Turbine

Curtailment

A reduction in firm or non-firm transmission service in response to a transmission capacity shortage as a result of system reliability conditions.

D Factors

For each Planning Period, the D Factors for load drop adjustment, are determined by the PJM OI from the relationship of increases in percent reserve requirements to various load drop ratios.

Daily Load and Capacity (DLC) File

A database used for storing actual hourly load data entered by the LSEs.

Delayed Outage

A Forced/Unplanned Outage that may be delayed for up to 6 hours.

Delivering Party

The entity supplying capacity and energy to be transmitted at Point(s) of Receipt.

Designated Agent

Any entity that performs actions or functions on behalf of the Transmission Provider, an Eligible Customer, or the Transmission Customer required under the Tariff.

Designated Transmission Facilities

Those transmission facilities owned by a Transmission Owner that are within the PJM Control Area, are identified in the listing of such facilities maintained by the PJM OI, and have a nominal operating voltage of 230 kV or greater or are facilities operating at a nominal voltage of less than 230 kV that:

- are vital to the operation of the PJM Control Area
- can, if subject to an outage, have a significant impact on transmission facilities with a nominal operating voltage of 230 kV or greater
- affect the capability and reliability of generating facilities or the power system model used by the PJM OI
- can have an affect on the PJM Control Area's interconnected operation with other Control Areas.

Direct Assignment Facilities

Facilities or portions of facilities that are constructed by an RTO at the direction of the Transmission Provider for the sole use/benefit of a particular Transmission Customer requesting service under the Tariff. Direct Assignment Facilities shall be specified in the Service Agreement that governs service to the Transmission Customer and shall be subject to Commission approval.

Dispatch Rate

The control signal, expressed in dollars per megawatt-hour, calculated and transmitted continuously and dynamically to direct the output level of all generation resources dispatched by the PJM OI in accordance with the Offer Data.

Diversified Planning Period Peak

The Diversified Planning Period Peaks for the LSEs are calculated based on the PJM forecast peak, LSEs' forecast peaks, and LSEs' net capabilities. Adjustments are made for Summer and Winter peaking LSEs.

eCapacity

eCapacity is an internet application designed to fulfill the data reporting requirements of PJM participants who have retail load responsibility in the Control Area or who are participating members of the capacity market. All information entered into the application is processed according to the PJM Operating Agreement and the PJM Transmission Tariff.

EHV

Extra High Voltage

Electric Distributor

PJM Member that owns or leases with rights equivalent to ownership electric distribution facilities that are used to provide electric distribution service to electric load within the PJM Control Area.

Eligible Customer

- any electric utility (including any RTO and any power marketer), Federal power marketing agency, or any person generating electric energy for sale for resale; electric energy sold or produced by such entity may be electric energy produced in the United States, Canada or Mexico; however, such entity is not eligible for transmission service that would be prohibited by Section 212(h)(2) of the Federal Power Act; and
- any retail customer taking unbundled Transmission Service pursuant to a state requirement that the Transmission Provider or an RTO offer the transmission service or pursuant to a voluntary offer of unbundled retail Transmission Service by an RTO.

Emergency

- an abnormal system condition requiring manual or automatic action to maintain system frequency, or to prevent loss of firm load, equipment damage, or tripping of system elements that could adversely affect the reliability of an electric system or the safety of persons or property; or
- a fuel shortage requiring departure from normal operating procedures in order to minimize the use of such scarce fuel; or
- a condition that requires implementation of Emergency procedures as defined in the PJM Manuals

Emergency Minimum Generation Limit

The least amount of generation which can be produced by a unit and still maintain it at a stable level of operation.

End-Use Customer

PJM Member that is a retail end-user of electricity within the PJM Control Area.

Energy Imbalance Service

Used to supply energy for mismatch between scheduled delivery and actual loads that have occurred over an hour.

Equivalent Load

The sum of an Internal Market Buyer's net system requirements to serve its customer load in the PJM Control Area, plus its net bilateral transactions.

eSchedules

A computerized information system, developed by PJM as an Internet application, that allows Load Aggregators and LDCs to provide and obtain information needed to schedule Internal Transactions under the Customer Choice Program.

External Market Buyer

A Market Buyer making purchases of energy from the PJM Interchange Market for consumption by end-users outside the PJM Control Area or for load in the Control Area that is not served by Network Transmission Service.

External Resource

A generation resource located outside the metered boundaries of the PJM Control Area.

External Transaction

An energy transaction between two parties in which the path of the energy crosses a PJM Control Area border.

Facilities Study

An engineering study conducted by the Transmission Provider to determine the required modifications to the Transmission Provider's Transmission System, including the cost and scheduled completion date for such modifications, that are required to provide the requested transmission service.

FERC

The Federal Energy Regulatory Commission.

FERC Order 889

This is the Federal Energy Regulatory Commission's order issued on April 24, 1996, which defines the requirements for OASIS.

F Factor

The F Factor represents the change in requirement for capacity installed of all the Parties in percent of peak load for every one percent change in average forced outage rate of all Parties and is established and changed from time to time by the Reserve Sharing Committee.

File Download

Transfer of a file from the PJM eSchedules/eCapacity server to the user's client PC.

File Upload

Transfer of a file from the user's client PC to the PJM eSchedules/eCapacity server.

Firm Point-to-Point Transmission Service

Transmission Service that is reserved and/or scheduled between specified Points of Receipt and Delivery.

Firm Transmission Service

Transmission service that is intended to be available at all times to the maximum extent practicable, subject to an Emergency, an unanticipated failure of a facility, or other event beyond the control of the owner or operator of the facility or the PJM OI.

First Contingency Basis

Operation of the bulk power electric supply system in the PJM Control Area in a manner intended to protect against the consequences of the failure or malfunction of any single bulk power facility, such that prior to a contingency occurring

- the loading on all such bulk power facilities is maintained within normal continuous ratings, and
- voltages are maintained at predetermined normal schedules at all load levels; and such that
- immediately following any single facility malfunction or failure
 - (1) the loading on all remaining facilities can be expected to be within emergency ratings,
 - (2) system stability is maintained, and
 - (3) an acceptable voltage profile is maintained.

Fixed Transmission Right (FTR)

A financial instrument which entitles the holder to receive compensation for certain congestion-related transmission charges that arise when the grid is congested and differences in locational prices result from the redispatch of generators out of merit order to relieve that congestion.

Forecast LSE Obligation

Forecast LSE Obligation is a Party's allocated portion of the Forecast Pool Requirement as determined by the PJM OI.

Forecast Obligation

The amount of Capacity Resources that a PJM Member is obligated to install or contract for to satisfy the requirements for the Planning Period.

Forecast Pool Requirement

The forecast capacity required to meet the forecasted load and ensure a sufficient level of reserves to provide for the unavailability of capacity resources, load forecasting uncertainty, and to permit planned and maintenance outages.

Forecast Zone Requirements

Portion of Forecast Pool Requirement that is allocated to each Zone.

Forced Outage Rate Adjustment (F)

A parameter used in the calculation of LSE forecast obligation determined by the Reserve Sharing Committee from forced outage data supplied by the LSE.

Forced Transmission Outage

An immediate removal from service of a Designated Transmission Facility by reason of an Emergency or threatened Emergency, unanticipated failure, or other cause beyond the control of the owner or operator of the Designated Transmission Facility (as specified in the relevant portions of the PJM Manuals), but not a removal from service of a Designated Transmission Facility in response to or in order to affect market conditions.

FTR OASIS

A computerized information system, developed as an Internet application, that facilitates trading of Fixed Transmission Rights on the secondary market.

GEBGE

PJM reliability computer program which contains two support programs called MEGAWATT and CAPMOD.

Generating Availability Data System (GADS)

A computer program and database used for entering, storing, and reporting generating unit data concerning outages and unit performance.

Generating Capability Rating Procedures Task Force (GCRPTF)

A PJM OI task force responsible for maintaining the rules and procedures for determination of generating capability (Green Book).

Generating Market Buyer

An Internal Market Buyer that owns or has contractual rights to the output of generation resources capable of serving the Market Buyers load in the PJM Control Area or of selling energy or related services in the PJM Interchange Energy Market or elsewhere.

Generating Unit Event Request

The “ticket” or form on which a request for any change in a generating unit’s capability is recorded by the PJM OI.

Generation Outage Rate Program (GORP)

A computer program maintained by the Generator Unavailability Subcommittee that uses GADS data to calculate outage rates and other statistics.

Generation Owner

PJM Member that owns or leases with rights equivalent to ownership facilities for generation of electric energy that are located within the PJM Control Area.

Generator Forced/Unplanned Outage

An immediate reduction in output or capacity or removal from service, in whole or in part, of a generating unit by reason of an Emergency or threatened Emergency, unanticipated failure, or other cause beyond the control of the owner or operator of the facility. A reduction in output or removal from service of a generating unit in response to changes in or to affect market conditions does not constitute a Generator Forced Outage.

Generator Maintenance Outage

The scheduled removal from service, in whole or in part, of a generating unit in order to perform necessary repairs on specific components of the facility approved by the PJM OI.

Generator Planned Outage

The scheduled removal from service, in whole or in part, of a generating unit for inspection, maintenance or repair with the approval of the PJM OI.

Generator Unavailability Subcommittee (GUS)

A PJM OI subcommittee, reporting to the Planning and Engineering Committee, that is responsible for computing outage rates and other statistics needed by the Reserve Sharing Committee for calculating LSE Forecast Obligations.

Good Utility Practice

Any of the practices, methods, and acts engaged in or approved by a significant portion of the electric utility industry during the relevant time period, or any of the practices, methods and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision is made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety and expedition. Good Utility Practice is not intended to be limited to the optimum practice, method, or act to the exclusion of all others, but rather is intended to include acceptable practices, methods, or acts generally accepted in the region.

GPU Energy

General Public Utilities

Green Book

The “Rules and Procedures for Determination of Generating Capability”, maintained by the GCRPTF.

Group Representative

An entity appointed by agreement among a group of PJM Participants to represent them on the Management Committee.

Identifiable Load

Identifiable Load is the load of a customer that has been identified in the load forecast of a Party that was used to forecast the Diversified Planning Period Peak.

Immediate Outage

This is a Forced/Unplanned Outage resulting in the immediate removal of the facility from service.

Inadvertent Interchange

Difference between net actual energy flow and net scheduled energy flow into or out of the Control Area.

Installed Capacity Accounting

Payments made between LSEs for adjusted planned purchases, basic accounted-for deficiencies and for peak season maintenance deficiencies of installed Capacity as determined by the PJM OI.

Interconnection

The supply systems of the PJM Members, functioning as a coordinated electrically interconnected supply system that operates as a single control area.

Interconnection Agreement

The Operating Agreement of PJM Interconnection, L.L.C..

Internal

Refers to facilities or market entities that are within the PJM Control Area.

Internal Market Buyer

A Market Buyer making purchases of energy from the PJM Interchange Energy Market for consumption by end-users inside the PJM Control Area.

Internal Transaction

An energy transaction between two parties in which the path of the energy remains inside the PJM Control Area borders.

Interruption

A reduction in non-firm transmission service due to economic reasons.

ITS

Interchange Transactions System

Large Unit Adjustment (U)

A parameter used in the calculation of forecast and accounted-for obligations determined by the Planning and Engineering Committee. This adjustment considers the reserve requirements for large units.

Load

Megawatts of load for both firm energy delivered to load located electrically within the PJM Control Area and firm energy delivered to the border of the PJM Control Area for receipt by others.

Load (Telemetered)

Total PJM load in MW at the time of the request

- *Operating Reserve* — As reported by LSEs
- *Spinning Reserve* — As reported by LSEs, Spinning Reserve is reported for both the entire region and for transmission constrained areas within the region, when applicable. PL and GPU should show both an Eastern Spinning Reserve value and a total Spinning Reserve value for their regions
- *Quick-Start Reserve* — As reported by LSEs, Quick-Start Reserve values are reported for Hydro and non-Hydro reserves separately
- *Secondary Reserve* — As reported by LSEs
- *Reserve Avail. <30* — As reported by LSEs, Scheduled Capacity not available within 30 minutes
- *Non-Reported Cap. Reduct.* — As reported by LSEs, the total amount of Capacity reductions that have been previously reported to PJM and therefore have not caused an adjustment to be made to the Scheduled Capacity

Load Aggregator

A licensed entity that may provide (sell) energy to retail customers within the service territory of a Local Distribution Company. Also known as Electric Generation Supplier (EGS).

Load Analysis Subcommittee (LAS)

Supplies the PJM peak and seasonal load forecasts.

Load Drop

A parameter used in the calculation of LSE forecast obligation determined by the Reserve Sharing Committee defined as the difference between a system's peak load and its average weekly loads. Load drop determines how much room is available to perform maintenance due to difference between the LSE's and pool load shapes.

Load Serving Entity (LSE)

An entity, including a load aggregator or power marketer, serving end-users within the PJM Control Area, and that has been granted the authority or has an obligation pursuant to state or local law, regulation or franchise to sell electric energy to end-users located within the PJM Control Area or the duly designated Agent of such an entity

Load Shedding

The systematic reduction of system demand by temporarily decreasing load in response to transmission system or area capacity shortages, system instability, or voltage control considerations.

Load & Capacity Task Force (L&CTF)

Performs the R Study and maintains the R Study Guide

Local Area Transmission Facilities

Those transmission facilities in the PJM Control Area that are not Designated Transmission Facilities.

Local Control Center (LCC)

The equipment, facilities, and personnel used by or on behalf of a Transmission Owner to communicate and coordinate with the PJM OI on the operation of, and to operate, Bulk Power Electric Supply System facilities.

Local Control Center Dispatcher

The system operators at the LCC who direct operation of the local facilities and communicate with the PJM OI dispatcher to coordinate operation of the Bulk Power Electric Supply system facilities.

Local Distribution Company (LDC)

A company in whose service territory Load Aggregators are providing energy to retail customers and whose distribution system is being used to transport the energy. Also known as Electric Distribution Company (EDC).

Locational Marginal Price (LMP)

The hourly integrated market clearing marginal price for energy at the location the energy is delivered or received.

LOLE

Loss of Load Expectation

LOLP

Loss of Load Probability

Long-Term Firm Point-to-Point Transmission Service

Firm Point-To-Point Transmission Service with a term of one year or more.

LSE Reserve Margin

The percent reserve for an LSE defined as $(R + F + U + D)$.

LSE Reserve Requirement

The level of installed or purchased reserves needed to satisfy the LSE's obligation to the PJM Control Area.

MAAC

The Mid-Atlantic Area Council, a reliability council under §202 of the Federal Power Act, established pursuant to the MAAC Agreement dated August 1994 or any successor.

MAAC EIA-411 Report

A report filed annually with NERC for filing with the Energy Information Agency (EIA) that provides load and capacity forecasts, fuel requirements and transmission adequacy study results for a 10 year period.

Maintenance Outage

The scheduled removal from service, in whole or in part, of a generating unit in order to perform necessary repairs on specific components of the facility.

Management Committee (Committee)

The Management Committee, composed of five Sectors, is responsible for the performance of the Operating Agreement of PJM Interconnection, L.L.C..

Marginal Scheduler

A computer optimization program used by the PJM OI to schedule marginal units required for future operating periods.

Market Buyer

A PJM Member that meets reasonable creditworthiness standards established by the PJM OI and that is otherwise able to make purchases in the PJM Interchange Energy Market.

Market Operations Center

The equipment, facilities, and personnel used by or on behalf of a Market Participant to communicate and coordinate with the PJM OI in connection with transactions in the PJM Interchange Energy Market or the operation of the PJM Control Area.

Market Participant

A Market Buyer or a Market Seller, or both.

Market Seller

A PJM Member that meets reasonable creditworthiness standards established by the PJM OI and that is otherwise able to make sales in the PJM Interchange Energy Market.

Maximum Generation Emergency

An Emergency declared by the PJM OI in which the PJM OI anticipates requesting one or more Capacity Resources to operate at its maximum net or gross electrical power output, subject to the equipment stress limits for such Capacity Resource, in order to manage, alleviate, or end the Emergency.

Maximum Generation Emergency Limit

The maximum net or gross electrical power that a generator can deliver for a limited period of time without exceeding specified limits of equipment stress.

Member Votes

Each PJM Member, or an Affiliate Group of PJM Participants, has one vote in the Management Committee Sector to which it belongs.

Metered

Refers to facilities or market entities that are within the PJM Control Area.

Metered Entity

A Local Distribution Company within the PJM Control Area that provides distribution and metering services to customers in its territory.

Metered Market Buyer

A Market Buyer making purchases of energy from the PJM Interchange Energy Market for consumption by end-users inside the PJM Control Area.

Mid-Atlantic Area Council (MAAC)

A regional reliability council of NERC responsible for ensuring the adequacy, reliability, and security of the bulk electric supply systems of the MAAC Region through coordinated operations and planning of generation and Transmission Facilities. The electric Control Area operated by the PJM OI is the MAAC region.

Minimum Generation Emergency

An Emergency declared by the PJM OI in which the PJM OI anticipates requesting one or more generating resources to operate at or below Normal Minimum Generation, in order to manage, alleviate, or end the Emergency.

Miscellaneous Adjustments

Adjustments to capacity subject to Reserve Sharing Committee approval such as transmission limitations, test energy conditions, limited energy and ambient conditions.

Native Load Customers

The wholesale and retail power customers of an RTO on whose behalf the RTO, by statute, franchise, regulatory requirement, or contract, undertakes an obligation to construct and operate the RTO's system to meet the reliable electric needs of such customers.

NEPOOL

New England Pool

NERC

The North American Electric Reliability Council, a reliability council responsible for the oversight of regional reliability councils established to ensure the reliability and stability of the regions.

Net Capability

The number of megawatts of electric power which can be delivered by an electric generating unit of a System under conditions and criteria specified by the PJM Board upon

consideration of the advice and recommendations of the Management Committee. Net Capabilities for all units are determined for both summer and winter operating conditions.

Net Capacity Verification Report (NETCAPVR)

A PC-based computer program that allows an LSE to provide Summer and Winter Net Verification Report data electronically rather than on paper forms.

Net Tie Flow (Telemetered)

Summation of the flows on all ties between PJM and the outside world (flows into PJM Control Area are positive (+); out of PJM are negative (-).

Network Customer

An entity receiving Transmission Service pursuant to the terms of the Transmission Provider's Network Integration Transmission Service.

Network Integration Transmission Service

Allows a Transmission Customer to integrate, plan, economically dispatch and regulate its network resources to serve its network load in a manner comparable to that in which the transmission provider utilizes its Transmission System to serve its Native Load Customers. Network Integration Transmission Service also may be used by the Transmission Customer to deliver non-firm energy purchases to its network load without additional charge.

Network Load

The load that a Network Customer designates for Network Integration Transmission Service. The Network Customer's Network Load includes all load served by the output of any Network Resources designated by the Network Customer. A Network Customer may elect to designate less than its total load as Network Load but may not designate only part of the load at a discrete Point of Delivery. Where a Eligible Customer has elected not to designate a particular load at discrete points of delivery as Network Load, the Eligible Customer is responsible for making separate arrangements for any Point-To-Point Transmission Service that may be necessary for such non-designated load.

Network Operating Agreement

An executed agreement that contains the terms and conditions under which the Network Customer operates its facilities and the technical and operational matters associated with the implementation of Network Integration Transmission Service.

Network Operating Committee

A group made up of representatives from the Network Customer(s) and the Transmission Provider established to coordinate operating criteria and other technical considerations required for implementation of Network Integration Transmission Service.

Network Resource

Any designated generating resource owned or purchased by a Network Customer under the Network Integration Transmission Service Tariff. Network Resources do not include any resource, or any portion, that is committed for sale to third parties or otherwise cannot be called upon to meet the Network Customer's Network Load on a non-interruptible basis.

Network Service User

An entity using Network Transmission Service.

Network Transmission Service

Transmission Service provided pursuant to the rates, terms and conditions set forth in the Tariff.

Network Upgrades

Modifications or additions to transmission-related facilities that are integrated with and support the Transmission Provider's overall Transmission System for the general benefit of all users of such Transmission System.

Non-Capacity Interchange Purchases

Amount of interchange purchases that are not capacity backed.

Non-Capacity Interchange Sales

Amount of interchange sales that are not capacity backed.

Non-Capacity Resource

A Capacity Resource that is not included as part of PJM's installed capacity.

Non-Firm Point-to-Point Transmission Service

Point-To-Point Transmission Service under the Tariff that is reserved and scheduled on an as-available basis and is subject to curtailment or interruption. Non-Firm Point-To-Point Transmission Service is available on a stand-alone basis for periods ranging from one hour to one month.

Non-Metered

Refers to facilities or market entities that are outside the PJM Control Area.

Non-Metered Market Buyer

A Market Buyer making purchases of energy from the PJM Interchange Energy Market for consumption by end-users outside the PJM Control Area or for load in the Control Area that is not served by Network Transmission Service.

Non-PJM-designated Transmission Facilities

The transmission facilities within the PJM Control Area that are not designated for PJM operation. These are also referred to as Local Non-designated Transmission Facilities.

Normal Maximum Generation

The highest output level of a generating resource under normal operating conditions.

Normal Maximum Generation Limit

The highest output level of a generating resource under normal operating conditions.

Normal Minimum Generation

The lowest output level of a generating resource under normal operating conditions.

Normal Minimum Generation Limit

The lowest output level of a generating resource under normal operating conditions.

NPCC

Northeast Power Coordinating Council

NRC

Nuclear Regulatory Commission

NYPP

New York Power Pool

Off-Cost

A given Load Serving Entity's (LSE) generation is being dictated by PJM Control Area security considerations.

Offer Data

The scheduling, operations planning, dispatch, new resource, and other data and information necessary to schedule and dispatch generation resources for the provision of energy and other services and the maintenance of the reliability and security of the Transmission System in the PJM Control Area, and specified for submission to the PJM Interchange Energy Market.

Office of Interconnection (OI)

Employees and agents of the L.L.C. engaged in implementation of the Operating Agreement and administration of the PJM Control Area.

Office Working Day

Any day from Monday to Friday, excluding PJM OI designated holidays.

Open Access Same-Time Information System (OASIS)

- The computer system that is used by Transmission Providers to exchange Transmission Service and Ancillary Service information with Transmission Customers. The OASIS requirements and standard of conduct were initially defined in FERC Order 889. These requirements may be modified by subsequent FERC orders.
- A computerized information system, developed as an Internet application, that allows LDCs to provide and obtain information needed to schedule transmission services.

Operating Agreement of PJM Interconnection, L.L.C.

That agreement dated as of March 28, 1997, as amended from time to time, that establishes the planning operation of the PJM Control, and provides for the PJM OI.

Operating Day

The daily 24 hour period beginning at midnight for which transactions on the PJM Interchange Energy Market are scheduled.

Operating Margin

Incremental adjustments, measured in MW, required in the PJM Control Area operations in order to accommodate in a first come contingency basis, an operating contingency in the PJM Control Area resulting from operation in an interconnected Control Area.

Operating Reserve

The amounts of generating Capacity scheduled to be available for specified periods of an Operating Day to ensure the reliable operation of the PJM Control Area.

ORNS

Operating Representatives of the Northeast Systems

Other Supplier

An entity other than a Generation Owner selling electric energy in the PJM Control Area.

Outage Transfer Distribution Factor (OTDF)

The electric power transfer distribution factor (PTDF) with a specific system facility removed from service (outage). The OTDF applies only for the post-contingency configuration of the systems under study.

PAR

Phase angle regulator.

Peak Period Maintenance Deficiency

The amount by which an LSE's Peak Period Maintenance Obligation exceeds its Capacity available for Peak Season Maintenance.

Peak Period Maintenance Obligation

For each day during the Peak Season, the amount, in megawatts of which is classified as a maintenance outage excluding PJM OI approved maintenance.

Peak Season

Peak Season is defined to be those weeks containing the 24th through 36th Wednesdays of the calendar year. Each such week begins on a Monday and ends on the following Sunday, except for the week containing the 36th Wednesday, which ends on the following Friday.

Peak Season Maintenance

Planned outages and maintenance outages during the Peak Season.

PICA

PJM Installed Capacity Accounting task force

PJM

The entity that directs the use of the transmission system and ensures that energy can flow from one location to another. PJM also keeps track of ownership and movement of energy and provides billing information and services.

PJM Board

A group consisting of seven voting members elected by the Management Committee that is responsible for the supervision and administration of the Operating Agreement of PJM Interconnection, L.L.C..

PJM Control Area

The electric Control Area operated by the PJM OI and recognized by NERC.

PJM Control Area Reserve Margin (R)

The percent margin of the forecast PJM Control Area requirement for the planning period over the coincident forecast planning period peak of all LSEs.

PJM Control Area-Scheduled Resource

This is a generating resource which the seller has turned over to the PJM OI for scheduling and control.

PJM Interchange

- the amount by which an Internal Market Buyer's hourly Equivalent Load is exceeded by the sum of the hourly outputs of the Internal Market Buyer's operating generating resources; or
- the hourly scheduled deliveries of Spot Market Energy by an External Market Seller from an External Resource; or
- the hourly net metered output of any other Market Seller

PJM Interchange Energy Market

The regional competitive market administered by the PJM OI for the purchase and sale of spot electric energy at wholesale in interstate commerce and related services established in the PJM Operating Agreement.

PJM Interchange Export

- the amount by which an Internal Market Buyer's hourly Equivalent Load is exceeded by the sum of the hourly outputs of the Internal Market Buyer's operating generating resources; or
- the hourly scheduled deliveries of Spot Market Energy by a Market Seller from an External Resource; or
- the hourly net metered output of any other Market Seller.

PJM Interchange Import

- the amount by which an Internal Market Buyer's hourly Equivalent Load exceeds the sum of the hourly outputs of the Internal Market Buyer's operating generating resources; or
- the hourly scheduled deliveries of Spot Market Energy to an External Market Buyer.

PJM Manuals

The instructions, rules, procedures and guidelines established by the PJM OI for the operation, planning, and accounting requirements of the PJM Control Area and PJM Interchange Energy Market.

PJM Member

Any entity that has completed an application and satisfies the requirements of PJM to conduct business with the PJM OI including Transmission Owners, Generating Entities, Load Serving Entities, and Marketers.

PJM OASIS Account Administrator

This is the person to contact if you have questions or need information about PJM OASIS. Directions to contact the administrator are on the PJM OASIS web page.

PJM Office of the Interconnection (PJM OI)

The facilities and staff of the PJM OI engaged in implementation of the PJM Operating Agreement and administration of the Tariff.

PJM OI Control Center

The equipment, facilities, and personnel used by the PJM OI to coordinate and direct the operation of the PJM Control Area and to administer the PJM Interchange Energy Market, including facilities and equipment used to communicate and coordinate with the Market Participants in connection with transactions in the PJM Interchange Energy Market or the operation of the PJM Control Area.

PJM Open Access Same-Time Information System

The electronic communication system for the collection and dissemination of information about Transmission Services in the PJM Control Area, established and operated by the PJM OI in accordance with FERC standards and requirements.

PJM Reserve Margin

The percent margin (R) of the Forecast Pool Requirement for the Planning Period over the coincident forecast Planning Period Peak of all LSEs.

PJM Reserve Requirement

The level of installed reserves needed to maintain the desired level of reliability as determined by the PJM OI.

PJM Tariff

PJM Open Access Transmission Tariff providing Transmission Service within the PJM Control Area, including schedules and exhibits.

Planned-For Account

One of two accounts in which LSE capacity payments are made. The Planned-For Account is based on forecast loads and capacities and is updated by actual conditions after the fact.

Planned-For Deficiency/Excess

The deviation from a PJM Member's Forecast Obligation as determined by the PJM OI system planning staff on a monthly basis.

Planned-For Obligation

See "*Forecast Obligation*".

Planned Outage

The scheduled removal from service, in whole or in part, of a generating unit for inspection, maintenance or repair with approval of the PJM OI.

Planned Transmission Outage

Any transmission outage scheduled for the performance of maintenance or repairs or the implementation of a system enhancement which is planned in advance for a pre-determined duration and which meets the notification requirements for such outages as specified by the PJM OI.

Planned Transmission Outage Schedule

The schedule of Planned Transmission Outages, including extended outages and scheduled retirements.

Planning Period

The twelve months beginning June 1 and extending through May 31 of the following year, provided as changing conditions may require, the Management Committee may recommend other Planning Periods to the PJM Board.

Planning Period Peak

For a summer peaking system, the Planning Period Peak and summer peak is equal. For a winter peaking system, the Planning Period Peak is equal to the average of the reduced winter peak for the Planning Period and the greater of its summer peak for the Planning Period or its reduced winter peak for the Planning Period immediately preceding.

Planning Period Peak Diversity Entitlement

For a winter peaking system, this entitlement is equal to one half the difference between its planning period peak and its summer peak. For a summer peaking system, the entitlement is equal to the ratio of the difference between the summer peak load and the reduced winter peak load to the sum of all such differences for all summer peaking systems multiplied by the sum of the planning period peak diversity entitlements of the winter peaking systems. In the event that the total of the planning period diversity entitlements of all LSEs so determined exceeds the sum of the differences between the summer peaks and reduced winter peaks of the summer peaking systems, such entitlements shall be proportionately reduced to equal in total such lower sum.

PLC

Programmable Logic Controller

PLOTS

PJM load model consisting of 52 weekly load distributions.

Point(s) of Delivery (POD)

Point(s) on the Transmission Provider's Transmission System where capacity and energy transmitted by the Transmission Provider is made available to the Receiving Party. The Point(s) of Delivery are specified in the Service Agreement for Long-Term Point-to-Point Transmission Service.

Point(s) of Receipt (POR)

Point(s) of interconnection on the Transmission Provider's transmission system where capacity and energy are made available to the Transmission Provider by the Delivering Party. The Point(s) of Receipt are specified in the Service Agreement for Long-Term Firm Point-to-Point Transmission Service.

Point-to-Point Transmission Service

The reservation and transmission of capacity and energy on either a firm or non-firm basis from the Point(s) of Receipt to the Point(s) of Delivery.

Pool Reserve Margin (R)

The percent margin of the forecast pool requirement for the planning period over the coincident forecast planning period peak of all LSEs.

Pool-Scheduled Resource

This is a generating resource which the seller has turned over to the PJM OI for scheduling and control.

Posted Path

Any control area to control area interconnection; any path for which service is denied, curtailed or interrupted for more than 24 hours in the past 12 months; and any path for which a customer requests to have ATC or TTC posted (defined in FERC Order 889).

Postponed Outage

This is a Forced/Unplanned Outage that may be postponed beyond 6 hours but no later than the end of the next weekend period.

Power Purchaser

The entity that is purchasing the capacity and energy to be transmitted under the Tariff.

Power Transfer Distribution Factor

A measure of the responsiveness or change in electric loading on system facilities due to a change in electric power transfer from one area to another, expressed in percent (up to 100%) of the change in power transfer. The PTDF applies only for the pre-contingency configurations of the system under study.

President

The President of the PJM Interconnection, L.L.C., appointed by the PJM Board, who directs and manages all of the staff and operations of the PJM OI and reports to the PJM Board.

Primary Reserve

Reserve capability which can be converted fully into energy within 10 minutes from the request of the PJM OI.

Quick-Start Reserve

Reserve capability which can be converted fully into energy within 10 minutes of the PJM OI's request and is provided by equipment not electrically synchronized to the power system.

Quorum

A Quorum for a meeting of the Management Committee will be the participation in person by at least two members or designated substitutes from each Sector with five or more members.

Ramping Capability

The sustained rate of change of generator output, in megawatts per minute.

RCP

Reliability Coordination Plan

Receiving Party

The entity receiving the capacity and energy transmitted by the Transmission Provider to Point(s) of Delivery.

Redispatch Cost

The cost or bid price of which exceeds the Unconstrained Market Clearing Price, multiplied by the amount of additional generation required for control of constraints on the Transmission System.

Reduced Winter Peak

The LSE forecasted winter peak reduced by the excess of its total capability under winter operating conditions over its total capability under of summer operating conditions. The total capability is defined as net capabilities of its Capacity Resources planned in service as of December 1st.

Regional Transmission Group (RTG)

A voluntary organization of transmission owners, transmission users and other entities approved by the Commission to efficiently coordinate transmission planning (and expansion), operation and use on a regional (and interregional) basis.

Regional Transmission Owner (RTO)

Each entity (a) that owns, leases or otherwise has a possessory interest in facilities used for the transmission of electric energy in interstate commerce, (b) that provides Transmission that is a party to the PJM Transmission Owners Agreement and PJM Operating Agreement.

Regulation

The capability of a specific generating unit with appropriate telecommunications, control and response capability to increase or decrease its output in response to a regulating control signal.

Regulation Class

A subset of the generation units capable of providing regulation to the PJM Control Area determined by a range of costs for providing regulation as specified by the PJM OI.

Reliability Assurance Agreement

Agreement amended from time to time, establishing obligations standards and procedures for maintaining reliable operation of the PJM Control Area.

Reliability Principles and Standards

The principles and standards established by NERC or MAAC to define, among other things, an acceptable loss of load due to inadequate generation or transmission capability.

Reserved Capacity

The maximum amount of capacity and energy that the Transmission Provider agrees to transmit for the Transmission Customer over the Transmission Provider's Transmission System between the Point(s) of Receipt and the Point(s) of Delivery. Reserved capacity is expressed in terms of whole megawatts on a sixty (60) minute interval (commencing on the clock hour) basis.

Reserved Transmission Capability

The maximum amount of capacity and energy reserved or agreed to be transmitted for the Transmission Customer over the PJM Control Area Transmission Service Facilities between the Point(s) of Receipt and the Point(s) of Delivery. Reserved Transmission Capability shall be expressed in terms of whole megawatts on a sixty (60) minute interval (commencing on the clock hour) basis.

Retail Load Responsibility

The agreed-upon hourly load, within the service territory of the Local Distribution Company, for which the Load Aggregator must provide energy to customers.

Retail System User

An end-user of electric energy within the PJM Control Area.

Retail Transaction

An energy transaction scheduled between a Load Aggregator and a Local Distribution Company for the Load Aggregator to supply energy for retail load in the LDC's service area.

R Study Guide

Procedures for "PJM Annual Resource Requirement Study and Associated Studies" - issued and maintained by the L&CTF.

Sector

One of five divisions of the Management Committee, which are: the Generation Owners Sector, Other Suppliers Sector, Transmission Owners Sector, Wholesale System Users Sector, and Retail System Users Sector.

Sector Votes

Each Sector's Sector Vote split into components for and against a pending motion in direct proportion to the Member Votes cast within the Sector for and against the pending motion (rounded to two decimal places).

Schedule

A set of MWh values consisting of one value for each hour of a single day.

Scheduled Capacity Not Available In 30 Minutes (Calculation)

Summation of total Reserve not available within 30 minutes and total non-reported capacity reductions.

Secondary and Communications Protocols for OASIS (S&CP)

This document contains the detailed requirements for implementation of an OASIS node. It was prepared by an EPRI-led industry working group.

Secondary Reserve

Reserve capability which can be converted fully into energy within a 10 to 30 minute interval following the request of the PJM OI. Equipment providing Secondary Reserve need not be electrically synchronized to the power system.

Secondary Transmission Provider (Reseller, or Secondary Provider)

Any customer who offers to sell transmission capacity it has purchased (defined in Standards and Communication Protocols for OASIS).

Security

The agreement relating to the sharing of certain generating capacity and related services among the parties to that agreement.

Self-Scheduled Resource

A generating resource that is scheduled and controlled by the owner or operator of the facility, under the overall coordination of the PJM OI.

Service Agreement

The initial agreement and any amendments or supplements entered into by the Transmission Customer and the Transmission Provider for service under the Tariff.

Service Commencement Date

The date the Transmission Provider begins to provide service pursuant to the terms of an executed Service Agreement, or the date the Transmission Provider begins to provide service.

Short-Term Firm Point-to-Point Transmission Service

Firm Point-To-Point Transmission Service under Part II of the PJM Control Area Open Access Tariff with a term of less than one year.

Simultaneous Feasibility Test (SFT)

A market feasibility test to ensure that the transmission system can support the subscribed set of FTRs during normal system conditions. The test models the flow according to the MW values of the FTRs on each line and determines if these values can be supported without causing a constraint.

Sink

- The bus, busses, company or pool receiving the transferred energy to evaluate ATC transfers for a given path using generation or load changes, or
- The point of receipt of the energy in a PJM eSchedules Contract.

Sole-Supplier Load

The portion of the Zone without choice of suppliers throughout the relevant Planning Period.

Source

- The bus, buses, company, or pool supplying the energy used to evaluate ATC transfers for a given path using generation or load changes, or
- The point of delivery of the energy in a PJM eSchedules Contract.

Spinning Reserve

Reserve capability which is required in order to enable an area to restore its tie-lines to the pre-contingency state within 10 minutes of a contingency which causes an imbalance between load and generation. During normal operation, these reserves must be provided by increasing energy output on electrically synchronized equipment or by reducing load on pumped storage hydroelectric facilities. During system restoration customer load may be classified as spinning reserve.

Spot Market Energy

Energy bought or sold by Market Participants through the PJM Interchange Energy Market at Locational Marginal Prices.

Summer Peak Diversity Entitlement

The ratio of an LSE's summer peak to the sum of the summer peaks of all LSE's multiplied by the difference between such sum of summer peaks and the coincident forecast planning period peak of all LSEs.

Summer Peak Period

The period from June 1 through September 30 of the Planning Period.

Summer Peaking Company

A system whose forecast maximum one hour load during the period of June through September exceeds its reduced winter peak.

Summer Peaking System

A system whose forecast maximum one hour load during the period of June through September exceeds its reduced winter peak.

SVC

Static Var Compensator

System Capacity

The sum of the Net Capabilities, based on specified summer generating conditions, of all the electric generating units of the LSE, with adjustments for firm capacity commitments and decreased by the amount of the limitations imposed by transmission facilities or any other limitations.

System Impact Study

An assessment by the Transmission Provider of (i) the adequacy of the Transmission System to accommodate a request for either Firm Point-To-Point Transmission Service or Network Integration Transmission Service and (ii) whether any additional costs may be incurred in order to provide transmission service.

Tariff

The PJM Open Access Transmission Tariff on file with the Federal Energy Regulatory Commission, as it may be amended from time to time.

Third-Party Sale

Any sale for resale in interstate commerce to a Power Purchaser that is not designated as part of Network Load under the Network Integration Transmission Service but not including a

sale of energy through the interchange energy market established under the PJM Operating Agreement.

Time Sharing Option (TSO)

Software that provides interactive communications for IBM's MVS operating system. It allows a user to launch an application from a terminal and work with it interactively.

Total Transfer Capability (TTC)

TTC is the capacity of a transmission path taking into account ATC and all of the complex transmission network operating factors.

Transaction Management System (TMS)

A computerized information system developed by PJM that allows Load Aggregators to provide and obtain information needed to schedule external energy transactions, and allows LDCs to schedule internal and external energy transactions.

Transmission Congestion Charge

A charge attributable to the increased cost of energy delivered at a given load bus when the Transmission System serving that load bus is operating under constrained conditions.

Transmission Congestion Credit

The allocated share of total Transmission Congestion Charges credited to each holder of Fixed Transmission Rights.

Transmission Customer

An entity that utilizes Point-to-Point Transmission Service.

Transmission Facilities

Facilities that:

- within the PJM Control Area, meet the definition of FERC's Uniform system of Accounts or have been classified as transmission facilities by FERC, or
- have demonstrated to the satisfaction of the PJM OI to be integrated with the PJM Control Area Transmission System, and integrated into the planning and operation of the PJM Control Area to serve all of the power and transmission customers within the PJM Control Area

Transmission Owner

A PJM Member that owns, leases, or otherwise has a possessory interest in facilities within the PJM Control Area used for the transmission of electric energy in interstate commerce.

Transmission Owners Agreement

An Agreement, amended from time to time, among Transmission Owners in the PJM Control Area, providing for an Open-Access Transmission Tariff in the PJM Control Area.

Transmission Provider

The Office of the Interconnection

Transmission Provider's Monthly Transmission System Peak

Maximum firm usage of the Transmission Provider's Transmission System in a calendar month.

Transmission Reliability Margin (TRM)

The amount of total non-simultaneous transfer capability necessary to ensure that the interconnected transmission network is secure under a reasonable range of system conditions.

Transmission Security System (TSS)

An PJM OI monitoring program that closely evaluates the integrity of the PJM transmission system on a real-time basis.

Transmission Service

Point-to-Point Transmission Service provided on a firm and non-firm basis.

Transmission Service Request (TSR)

Definition

Transmission Services Enabling Agreement

A document which gives authorization to post transmission requests on the OASIS.

Transmission Services Information

Transmission and ancillary services information which must be made available by public utilities on a non-discriminatory basis to meet the regulatory requirements of transmission open access (defined in Standards and Communication Protocols for OASIS).

Transmission System

The facilities owned, controlled or operated by the transmission provider within the PJM Control Area that are used to provide Transmission Service.

Unaccounted for Capacity

The capacity reported on the load and capacity printout (10), minus the calculated operating capacity, minus scheduled capacity not available in 30 minutes. This is the amount of capacity that is reported available at the time of the IRC, but cannot be accounted for based on system conditions at the time of the IRC.

Unavailable Capability

The algebraic difference at any time between system capacity and the available capability at that time. Available capability is determined according to definitions and criteria specified by the Operating Committee and approved by the PJM Board upon consideration of the recommendation of the Management Committee. The several component causes of unit unavailability, namely:

- forced outages
- planned and maintenance outages
- miscellaneous adjustments

are determined according to definitions and criteria specified by the Operating Committee and Planning and Engineering Committee and approved by the PJM Board upon consideration of the recommendation of the Management Committee.

Unconstrained Locational Marginal Price

A rate in dollars per MWh equal to the cost or bid price in dollars per MWh of the highest-priced increment of energy that was requested to operate by the PJM OI during that hour if no constraints were experienced on the Transmission System, or the highest-priced increment of energy that would have been requested to operate if constraints actually experienced on the Transmission System had been disregarded.

Unconstrained Posted Path

Any posted path not determined to be a constrained posted path (defined in FERC Order 889).

Unforced Capacity

Installed capacity that is not experiencing a forced outage calculated on a rolling 12-month average.

Uniform Resource Locator (URL)

The Internet addressing scheme that defines the route to a file or program. For example, a home page on the World Wide Web is accessed via its URL.

Unit Commitment Database (UCDB)

A central repository for generating unit cost, availability, and constraint data at the PJM OI. Information is entered by the PJM member companies and is used for scheduling, dispatching, and accounting.

Unscheduled Transmission Service

Transmission Service which is not pre-defined in the Operating Agreement, with the compensation determined by the PJM OI.

Unmetered Gen. & Pumping Load

Any generation (+) or pumping load (-) that is not telemetered. In the future this space may be used for the reporting of Non-Utility Generation (NUGs).

VCP

Voltage Coordination Plan

Weather Normalized Loads

A load adjustment technique approved by the Load Analysis Subcommittee to compensate load data for weather conditions.

Weekday Period

The period of the week which begins at 0800 on Monday and ends at 2200 on Friday.

Weekend Period

The period of the week which begins at 2200 on Friday and ends at 0800 on Monday.

Wholesale Transaction

A bulk energy transaction between two market entities.

Winter Peak Period

The period from December 1 through March 31 of the Planning Period.

Winter Peaking Company

A system whose reduced winter peak is greater than its forecast maximum one hour load during the period of June through September.

Winter Peaking System

The period from December 1 through March 31 of the Planning Period.

World

Refers to information obtained from sources outside the PJM Control Area, e.g., NERC, ECAR, NPCC, and SERC.

Wholesale System User

An entity that purchases electric energy for resale, or uses transmission service for such transactions, within the PJM Control Area.

Zone

An area within the PJM Control Area, as set forth in the Tariff.

Attachment B: Procedure for Installed Capacity Changes

LSEs use the attached procedures and forms for requesting Installed Capacity changes.

Changes to the PJM Installed Capacity

The PJM Installed Capacity Change requirements are:

- (1) Submit *Attachment F, Service Agreement for Network Integration Transmission Service* from the Tariff (attached) to:

Transmission Service Administrator

PJM Interconnection, L.L.C.

955 Jefferson Avenue

Valley Forge Corporate Center

Norristown, PA 19403

(610) 666-8841

(610) 666-4379 (fax)

- (1) The PJM OI will ask some specific questions associated with the Installed Capacity change (see the attached *Items Essential to the Evaluation of Request for Network Integration Transmission Service as Related to the Installed Capacity System*) to determine what sort of change is being submitted and whether it has been included in the *Annual Load and Capacity Forecast and Allocation of Forecast Requirements* for the year that covers the Planning Period in which the change will become effective.
- (2) Although the Tariff allows for 60 days, the PJM OI will process the requested change as rapidly as possible; however, please do not wait until the last minute to submit a change in case the change requires technical analysis. If the change is a part of the *Annual Load and Capacity Forecast and Allocation of Forecast Requirements* report, then approval will be granted almost immediately upon review.
- (3) If additional study is required to determine whether the change can be reliably incorporated into the system for the timeframe requested, the PJM OI will conduct this analysis in a timely manner, keeping the requester informed of the intent and nature of the study to be performed as well as status of the request.

Impacts to PJM Companies:

- (1) Accounting Guidelines will no longer exist. Therefore, the former rule that “as long as a change to Installed Capacity was received before the peak of the day, it was valid” is no longer true. A fax or telephone call to the PJM OI personnel previously charged with receiving such notification the evening before an Installed Capacity change is desired will no longer suffice.
- (2) The Service Agreement calls for the signature of an “authorized official”. It is necessary that you provide a list of qualified submitters of Installed Capacity changes to the PJM OI. **Unless otherwise informed in writing, the PJM OI will only accept changes to Installed Capacity from the list of persons authorized to submit changes.**
- (3) If an Installed Capacity request is submitted less than 60 days before it is to become effective, then the submitter runs the risk that the request may not be implemented on the requested date. Changes to Installed Capacity which are already included in approved Load and Capacity plans should be able to be approved within one working day.

REQUEST FOR NETWORK INTEGRATION TRANSMISSION SERVICE
ASSOCIATED WITH AN INSTALLED CAPACITY CHANGE

Date of Change Submittal: _____
 Name of Generation Resource: _____
 PJM Member: _____
 Requested Effective Date: _____ Requested Effective Time: _____
 MW Change - Summer: _____ MW Change - Winter: _____
 Name of Requester: _____
 Address: _____

 Telephone: _____
 FAX: _____
 Internet EMail Address: _____

Generation Resource Change	Enter "Yes" for Change	Enter "Yes" for "Part of Plan" or "No" for "Not Part of Plan"
Rerate of Existing Unit	_____	_____
New Unit	_____	_____
Transaction Resource Change	Enter "Yes" for Change	Enter "Yes" for "Part of Plan" or "No" for "Not Part of Plan"
Company to Company Within Control Area	_____	_____
Adjacent External to Internal	_____	_____
Non-Adjacent External to Internal	_____	_____
Internal to Adjacent External	_____	_____
Internal to Non-Adjacent External	_____	_____

*Exhibit B.1: Request For Network Integration Service Associated With An Installed Capacity Change Request -
 Page 1 of 2*

Notes:

While the entity which the requester represents may have been determined to be eligible to partake of the services offered under the Agreement and Tariff it is essential that the persons authorized within the entity be made known to the PJM OI.

For Generation changes involving Joint-Owned facilities, change must be requested by all owners.

Claims to the same capacity by different parties or a claim by a party to capacity already claimed by and included in the Installed Capacity of another party will not be processed until the matter is resolved between the two claimants.

For Transaction changes between PJM Members, reports must be submitted by all parties.

Being part of the "Plan" refers to either (a) having been included in the annual Load and Capacity Forecast and Allocation of Forecast Requirements for a year that covers the Planning Period in which the Application for Network Service - Installed Capacity is to occur or (b) reported as a change to the Network Resources as installed, rerated or transacted-for with deliverability approved by P&E in supplement and/or in place of resources under the aforementioned plans. An entity that was part of such an approved forecast will have had certain deliverability demonstrations already performed.

Comments:

***Exhibit B.1: Request For Network Integration Service Associated With An Installed Capacity Change Request -
Page 2 of 2***

PJM Installed Capacity Process Reporting of Actual Changes

The PJM Actual Installed Capacity is a dynamic value capable of being changed at any time for any amount in whole megawatts (presently).

The generation and transaction components of the Installed Capacity are considered Network Resources, and as such must conform to the applicable portions of the PJM Open Access Transmission Tariff where they are defined as:

Network Resource: Any designated generating resource owned or purchased by a Network Customer under the Network Integration Transmission Service Tariff. Network Resources do not include any resource, or any portion thereof, that is committed for sale to third parties or otherwise cannot be called upon to meet the Network Customer's Network Load on a non-interruptible basis. (*PJM Open Access Transmission Tariff of 3/12/97, Part I, Section 1, Definition 1.25*)

Scope of Service: Network Integration Transmission Service is a Transmission Service that allows Network Customers to efficiently and economically utilize their Network Resources (as well as other non-designated generation resources) to serve their Network Load located in the PJM Control Area and any additional load that may be designated pursuant to Section 31.3 of the Tariff. The Network Customer taking Network Integration Service must obtain or provide Ancillary Service pursuant to Section 3. (*PJM Open Access Transmission Tariff of 3/12/97, Part III, Section 28, Definition 28.1*)

Network Integration Transmission Service: The transmission Provider will provide firm transmission service over the Transmission System to the Network Customer for the delivery of capacity and energy from its designated Network Resources to service its Network Loads on a basis that is comparable to each RTO's use of the Transmission System to reliably serve its native load customers. (*PJM Open Access Transmission Tariff of 3/12/97, Part III, Section 28, Definition 28.3*)

Restrictions on Use of Service: The Network Customer shall not use Network Integration Transmission Service for (I) sales of capacity or energy to non-designated loads, or (ii) direct or indirect provisions of transmission service by the Network Customer to third parties. All Network Customers taking Network Integration Transmission Service shall use Point-to-Point Transmission Service under Part II of the Tariff for any Third-Party Sale which requires use of the Transmission Provider's Transmission System. (*PJM Open Access Transmission Tariff of 3/12/97, Part III, Section 28, Definition 28.6*)

ATTACHMENT F
Service Agreement For

- Network Integration Transmission Service**Error! Bookmark not defined.
- 1.0 This Service Agreement, dated as of _____, is entered into, by and between the Office of the Interconnection, as agent on behalf of the Transmission Provider within the PJM Control Area and _____ (Transmission Customer).
 - 2.0 The Transmission Customer has been determined by the Office of the Interconnection to have a valid request for Network Transmission Service under the Tariff and to have satisfied the conditions for service imposed by the Tariff.
 - 3.0 The Transmission Customer has provided to the Office of the Interconnection an Application deposit in the amount of \$_____, which will be applied to charges for service under this Agreement in accordance with the provisions of Section 29.2 of the Tariff.
 - 4.0 Service under this agreement shall commence on the later of: (1) _____, or (2) the date on which construction of any Direct Assignment Facilities and/or Network Upgrades are completed, or (3) such other date as it is permitted to become effective by the Commission. Service under this agreement shall terminate on _____.
 - 5.0 The Office of the Interconnection agrees to provide, on behalf of the Transmission Provider within the PJM Control Area, and the Transmission Customer agrees to take and pay for Network Transmission Service in accordance with the provisions of the Tariff, including the Network Operating Agreement (which is incorporated herein by reference), and this Service Agreement as they may be amended from time to time.
 - 6.0 Any notice or request made to or by either Party regarding this Service Agreement shall be made to the representative of the other Party as indicated below.

Office of the Interconnection:

PJM Interconnection, L.L.C.
955 Jefferson Avenue
Valley Forge Corporate Center
Norristown, PA 19403-2497

Transmission Customer:

Exhibit B.2: Service Agreement For Network Integration Transmission Service - Page 1 of 5

7.0 The Tariff for Network Integration Transmission Service is incorporated herein and made a part hereof.

IN WITNESS WHEREOF, the Office of the Interconnection and Transmission Customer have caused this Service Agreement to be executed by their respective authorized officials.

Office of the Interconnection:

By: _____
Name Title Date

Transmission Customer:

By: _____
Name Title Date

Exhibit B.2: Service Agreement For Network Integration Transmission Service - Page 2 of 5

CERTIFICATION

I, _____, certify that I am a duly authorized officer of

_____ (Transmission Customer) and that
_____ (Transmission Customer) will not request service under
this Service Agreement to assist an Eligible Customer to avoid the reciprocity provision of this Open-
Access Transmission Tariff.

(Name)

(Title)

Subscribed and sworn before me this ____ day of _____, _____.

(Notary Public)

My Commission expires: _____

Exhibit B.2: Service Agreement For Network Integration Transmission Service - Page 3 of 5

SPECIFICATIONS FOR
NETWORK INTEGRATION TRANSMISSION SERVICE

- 1.0 Term of Transaction: _____
Start Date: _____
Termination Date: _____
- 2.0 Description of capacity and/or energy to be transmitted within the PJM Control Area (including electric control area in which the transaction originates).

- 3.0 Network Resources: _____
- 4.0 Network Load: _____
- 5.0 Maximum amount of capacity and/or energy to be transmitted (Contract Demand):

- 6.0 Designation of party subject to reciprocal service obligation: _____
- 7.0 Name(s) of any Intervening Systems providing transmission service: _____

Exhibit B.2: Service Agreement For Network Integration Transmission Service - Page 4 of 5

8.0 Service under this Agreement may be subject to some combination of the charges detailed below. (The appropriate charges for individual transactions will be determined in accordance with the terms and conditions of the tariff.)

8.1 Embedded Cost Transmission Charge: _____

8.2 Facilities Study Charge: _____

8.3 Direct Assignment Facilities Charge: _____

8.4 Ancillary Services Charge: _____

8.5 Other Supporting Facilities Charge: _____

Exhibit B.2: Service Agreement For Network Integration Transmission Service - Page 5 of 5

Reconciliation of Conflicting Claims

In accordance with Article VIII, Section 8.4 a) and Article X, Section 10.1 d) of the Operating Agreement of PJM Interconnection, L.L.C. , Attachment F of the PJM Open Access Transmission Tariff and the PJM Manual for Installed Capacity: Generation Data Systems, the following outlines the procedures that the PJM staff will utilize when a conflict is identified regarding claims for installed capacity credit. Three scenarios have been identified where reconciliation of conflicting claims will be required. These are:

- Generation resources not previously included in any member's installed capacity re claimed or transacted for by two or more companies.
 - Generation resources in a Company's installed capacity through ownership or contractual arrangement are claimed or transacted for by another Company and contested by the first Company.
 - Parties transacting capacity disagree on the transaction start/end dates or the contract capacity magnitude.
- (1) Generation resources not previously included in any member's installed capacity are claimed or transacted for by two or more companies.
- Written notice will be given by the PJM OI to the Claimants of Conflict via facsimile delivery as soon as the conflict is noticed. This notice will be followed by a hard-copy mailed on the same day as facsimile transmission.
 - The PJM OI will facilitate any discussion and/or meetings to resolve the matter within five (5) working days of the initial notice to the parties involved.
 - If the issue is not resolved through these facilitated discussions, the matter will be submitted to the Dispute Resolution Process.
 - Installed Capacity billing relevant to the disagreement will be suspended until after the resolution process has been completed. An estimate of possible billing could be rendered to assist in the resolution process if requested.
 - Changes to System Installed Capacity will be as of the date of the settlement. There will be no retroactive changes to the System Installed Capacity. Monetary redress, if applicable, should be discussed between the parties involved as part of the Dispute Resolution Process.
- (2) Generation resources in a Company's installed capacity through ownership or contractual arrangement are claimed or transacted for by another Company and contested by the first Company.
- The previously approved capacity remains with the party having the prior claim to the resource.
 - Written notice will be given by the PJM OI to the Claimants of Conflict via facsimile delivery as soon as the conflict is noticed. This notice will be followed by a hard-copy mailed on the same day as facsimile transmission.
 - The PJM OI will facilitate any discussion and/or meetings to resolve the matter within five (5) working days of the initial notice to the parties involved.

- If the issue is not resolved through these facilitated discussions, the matter will be submitted to the Dispute Resolution Process.
 - Installed Capacity billing relevant to the disagreement will be suspended until after the resolution process has been completed. An estimate of possible billing could ~~will~~ be rendered to assist in the resolution process if requested.
 - The party with the later claim to the resource must pay an amount equal to the deficiency charge with which the PJM OI will secure excess capacity within the pool until the dispute is resolved. The winner of the dispute will receive credit for the contested capacity resource; the loser of the dispute will be responsible for the deficiency charge. This ensures that the total required capacity is still available to the pool during the dispute process to insure reliability.
 - Changes to System Installed Capacity will be as of the date of the settlement. There will be no retroactive changes to the System Installed Capacity. Monetary redress, if applicable, should be discussed between the parties involved as part of the Dispute Resolution Process. As part of the Dispute Resolution Process, monetary redress should consider, among other things, expenses incurred by the parties (e.g. time and materials) as well as the cost of the arbitration process.
- (3) Parties transacting capacity disagree on the transaction start/end dates or the contract capacity magnitude.
- Written notice will be given by the PJM OI to the Claimants of Conflict via facsimile delivery as soon as the conflict is noticed. This notice will be followed by a hard-copy mailed on the same day as facsimile transmission.
 - The PJM OI will facilitate any discussion and/or meetings to resolve the matter within five (5) working days of the initial notice to the parties involved.
 - If the issue is not resolved through these facilitated discussions, the matter will be submitted to the Dispute Resolution Process.
 - No changes to the Installed Capacity of either party will be made until the Dispute Resolution Process has been completed.
 - Changes to System Installed Capacity will be as of the date of the settlement. There will be no retroactive changes to the System Installed Capacity. Monetary redress, if applicable, should be discussed between the parties involved as part of the Dispute Resolution Process.