

Peak Load Contribution and Network Service Peak Load

In conformity with PJM's tariff, this document outlines the process Virginia Electric and Power Company (Dominion Energy) uses to determine the capacity peak load contribution (PLC) and transmission network service peak load (NSPL). The PLC value is in effect on an annual basis from June 1 through May 31 and the NSPL value is in effect on a calendar basis beginning January 1.

Peak Load Contribution

As the electric distribution company (EDC) in the PJM Dominion Zone, Dominion collects and reports load data to PJM. This data, in turn, is used by PJM to calculate the hours of the five highest daily peak loads (5CP) on the entire PJM system June 1 through September 30; PJM load management events are added back by PJM for an unrestricted value. PJM, through forecast modeling, uses this data to calculate a weather-normalized unrestricted capacity obligation (UCAP) for the load serving entities (LSE) in the Dominion Zone.

The methodology Dominion uses for determining a Customer's PLC depends upon the type of metering it possesses for a Customer's load during PJM's 5CP:

- **Interval Meter** - Records the Customer's kWhs on an interval basis for each billing cycle. The interval kWhs are used to determine hourly load values, and the hourly loads are summed to determine the Customer's total kWhs for the billing cycle.
- **Non-Interval Demand Meter** - Records the Customer's total kWhs for a billing cycle as well as the highest kW demand measured over a 30-minute period. However, there is no record of the amount of load on an hourly interval basis.
- **Non-Interval Monthly Meter** - Records the Customer's total kWhs for a billing cycle. There is no record of the amount of load on an hourly interval basis.

Based upon the type of metering a Customer possesses, a Customer class load profile is established. Since interval metered Customers have a historical record of their own hourly load data, they utilize their own unique individual load values. On the other hand, historical interval data is not available for non-interval metered Customers and for this reason a class load profile is developed from a sampling of survey meters installed at Customer locations for load research purposes. These load research meters provide hourly load values that represent the average usage in a Customer class and establish the class load profile.

After determining a Customer's type of metering, Dominion goes through a five step process to determine its PLC.

1) Retrieve Customer's Hourly Load Data

Load data for a Customer, corresponding to PJM's 5CP, is assembled from Dominion's data warehouse -- customer specific hourly metered data is used for interval metered Customers, whereas, load research profiles are used for non-interval metered Customers. If a Customer is new and does not possess historical metering, load research data is used until sufficient Customer data becomes available.

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2) Calculate Customer's Unrestricted Load

As explained in PJM Manual 19: Load Forecasting and Analysis, any PJM load management event that occurs during one of PJM's 5CP, and confirmed in PJM DR Hub, is added back to hourly load. PJM calculates the amount, if any, of load add-back and provides this data to Dominion.

PJM Manual 19: Load Forecasting and Analysis
Attachment A, Requirements for Production of Load Drop Estimates

		Reason for Load Drop		
		PJM-Initiated Emergency or Pre- Emergency Event of CSP-Initiated Test	Economic Event	EDC- or CSP- Initiated Event
Program Registration	Emergency/Pre- Emergency Full (DR) or Emergency/ Pre-Emergency Capacity Only (DR)	Load Drop Estimates must be produced for any interruption that occurs during a product-type registration's required availability window set forth in PJM Manual 18 or any interruption outside the required availability window for which such registration received Bonus MWs in the Performance Assessment Hour.	Load Drop Estimates must be produced for any settled interruptions.	No Load Drop Estimates required.
	Emergency Energy Only	Load Drop Estimates must be produced for any interruptions during Emergency/Pre- Emergency hours.	No Load Drop Estimates required.	No Load Drop Estimates required.
	Economic	No Load Drop Estimates required.	No Load Drop Estimates required.	No Load Drop Estimates required.

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3) Apply Loss Expansion Factor

Each Customer is assigned a loss expansion factor based on voltage to gross-up load to reflect line losses.

4) Calculate Unreconciled PLC

An average of the hourly unrestricted loads corresponding to PJM's 5CP is multiplied by the loss expansion factor to arrive at an unreconciled PLC.

5) Calculate Reconciled PLC

The sum of all unreconciled PLCs is scaled to match PJM's UCAP for the Dominion Zone. This process creates a scaling factor that is applied to each unreconciled PLC to come up with a reconciled value.

Network Service Peak Load

ATTACHMENT M-2 (Dominion)

Dominion Energy Procedures for Determining Each Network Customer's Dominion Zone Network Service Peak Load Contribution (NSPL) and Virginia Network Service Peak Load Contribution (VaNSPL)

Procedures Applicable to Network Load in the Dominion Zone

The methodology for determining the network service peak load contribution ("NSPL") and Virginia network service peak load contribution ("VaNSPL") for each Network Customer is described in steps 1 through 5 below. Each customer's NSPL and Va NSPL is based on an average of 12 coincident peak demands ("12-CP") allocation factor applied to the Dominion Zone annual peak. The Dominion Zone annual peak is established during the 12 months ending October 31 of the previous calendar year prior to the calendar year that it is to be used for billing. Each Network Customer's average 12-CP allocation factor is based on an average of twelve monthly coincident peak demands established during the previous 12 months ending September 30 prior to the calendar year that this data is used for billing ("12-CP Measurement Period"). Steps 6 through 9 establish the Daily Network Service Peak Load Contributions and Daily Virginia Network Service Peak Load Contributions used for billing NITS throughout the calendar year immediately following the NSPL Measurement Period.

1) Retrieve Hourly Load Data – Collect hourly load data for all Network Customers, excluding Southeastern Power Administration ("SEPA")¹, provided transmission service in the Dominion Zone, including any applicable losses, coincident with each of the Dominion Zone's 12 monthly transmission system peaks (12-CPs) during the 12-CP Measurement Period. The hourly load data collected for each of these twelve hours shall not include any adjustments for SEPA capacity and energy.

¹SEPA capacity and energy are allocated to certain Preference Customers in accordance with the Network Integration Transmission Service Agreement Among PJM L.L.C. and Southeastern Power Administration ("PJM & SEPA NITSA").

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2) Calculate Each Network Customer's Average 12-CP Demand

- a) For each Network Customer excluding SEPA and not entitled to SEPA capacity and energy delivered to the Dominion Zone, total the monthly hourly loads collected in step 1 and divide by 12.
- b) For each Network Customer entitled to SEPA capacity and energy delivered to the Dominion Zone, subtract the applicable SEPA capacity including losses entitlement from each of its monthly hourly loads collected in step 1 and then total the resulting differences and divide by 12.
- c) For SEPA, total the SEPA capacity including losses subtracted from the hourly loads in step 2 b in each month and then total these twelve monthly amounts and divide by 12.

3) Calculate Each Network Customer's Average 12-CP Allocation Factor – Divide each Network Customer's Average 12-CP Demand by the total of all the Average 12-CP Demands.

4) Calculate Each Network Customer's Network Service Peak Load Contribution (NSPL) –

Multiply the Dominion Zone NSPL by each Network Customer's Average 12-CP Allocation Factor. The Sum of all the NSPLs shall equal the Dominion Zone NSPL which equals the 1-CP Divisor used in the Virginia Electric and Power Company Formula Rate – Appendix A, line 169.

5) Determine Each Network Customer's Virginia Network Service Peak Load Contribution (VaNSPL) –

The VaNSPL for each Network Customer that has Dominion Zone Network Load only in Virginia shall equal the NSPL for that Network Customer. The VaNSPL for each Network Customer that does not have any Dominion Zone Network Load in Virginia shall equal zero. The Va NSPL for each Network Customer that has Dominion Zone Network Load in both the Virginia and North Carolina portions of the Dominion Zone shall include only the portion of its NSPL attributed to its Network Load in the Virginia portion of the Dominion Zone. The sum of the VaNSPLs shall equal the Virginia Portion of the Dominion Zone NSPL shown on Attachment 10 in the Virginia Electric and Power Company Formula Rate – Appendix A

6) Calculate Daily Retail Customer Network Service Peak Load Contribution (DRNSPL) – Each retail customer's DRNSPL shall be determined consistent with the process described above for determining each Network Customer's NSPL.

Note: Dominion Energy does not calculate the DRNSPL for the retail customers of wholesale LSEs like municipal electric utilities and electric cooperatives.

7) Calculate Daily Retail Customer Virginia Network Service Peak Load Contribution (DRVANSPL) –

Each retail customer's DRVANSPL shall be determined consistent with the process described above for determining each Network Customer's VaNSPL.

Note: Dominion Energy does not calculate the DRVANSPL for the retail customers of wholesale LSEs like municipal electric utilities and electric cooperatives.

8) Calculate Daily Network Service Peak Load Contribution (DNSPL) –

Each Network Customer's Daily Network Service Peak Load Contribution for any given day of the calendar year is equal to the sum of the DRNSPLs for all the retail customers that it has the responsibility to obtain transmission service for during that day.

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9) Calculate Daily Virginia Network Service Peak Load Contribution (DVaNSPL) –

Each Network Customer's Daily Virginia Network Service Peak Load Contribution for any given day of the calendar year is equal to the sum of the DRVaNSPLs for all the retail customers that it has the responsibility to obtain transmission service for during that day.

10) Transition Period –

The Transition Period recognizes that the NSPLs and VaNSPLs used for billing in 2019 have already been established. To prevent a mid-year billing change each Network Customer's NSPL and VaNSPL contributions that will be used for billing during the 2019 calendar year shall continue to be those determined using the methodology in effect prior to the methodology described in this attachment. For all other following calendar years, each Network Customer's NSPL and Va NSPL shall be determined using the process described in steps 1-5.