

RESPONSE TO STAFF  
REQUEST: SR TT-1  
WITNESS(S): HERLING / REYNOLDS  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
LOAD FORECAST

QUESTION:

How many times a year does the peak load, as forecasted, occur?

ANSWER:

As described in the direct testimony of John Reynolds, the forecast peak load is a 50/50 forecast, meaning that the actual peak load has a 50% chance of exceeding the forecast peak load and a 50% chance of being less than the forecast peak load. Therefore, the actual peak load may never exactly equal the forecasted peak load. While it is impossible to predict how many times a year the forecasted peak load will actually occur, on average the forecasted peak load (or a higher load) should occur once every other year.

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REQUEST: SRTT-2  
WITNESS(S): HERLING / REYNOLDS  
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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
LOAD FORECAST

QUESTION:

How many hours of the year does the peak load, as forecasted, occur?

ANSWER:

See response to SRTT-1.

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REQUEST: SRTT-3  
WITNESS(S): HERLING / REYNOLDS  
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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
LOAD FORECAST

QUESTION:

Please provide a range (in minutes or hours) for how long each peak load, as forecasted, occurs.

ANSWER:

See response to SRTT-1. The duration of a peak load occurrence during actual operations is highly variable and depends, primarily, on weather conditions over the days leading up to the peak.

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REQUEST: SRTT-4  
WITNESS(S): HERLING / MCGLYNN  
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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
LOAD FORECAST, NERC

QUESTION:

Are NERC reliability violations projected to occur during the peak load forecast?

ANSWER:

For each load deliverability test, a 90/10 peak load level is used in the area under analysis with all other areas set at 50/50 peak load levels. The projected violations are described in Exhibit PFM-1 attached to the direct testimony of Paul F. McGlynn.

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REQUEST: SRTT-5  
WITNESS(S): HERLING  
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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
LOAD FORECAST, NERC

QUESTION:

Are NERC reliability violations projected to occur only during the peak load forecast?

ANSWER:

PJM analysis is conducted to study stressed system conditions which are expected to occur during the peak load season. The specific test conditions are referred to in response to SRTT-4 and are described in PJM Manual M-14B. The occurrence of violations of reliability criteria during actual operations can occur under a wide range of conditions depending on system load levels and the availability of individual generators.

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REQUEST: SRTT-6  
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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
NERC RELIABILITY CRITERIA VIOLATIONS

QUESTION:

If the Susquehanna-Roseland transmission line is not constructed, at what probability is it projected that NERC reliability violations will occur each year between 2011 and 2020? How many violations are estimated per each year?

ANSWER:

PJM has not conducted any probability analysis with respect to the occurrence of reliability criteria violations, nor has PJM quantified the loss of load expectation absent the Susquehanna-Roseland Project. PJM has identified reliability criteria violations absent placing the Susquehanna-Roseland line in service, which will occur under the expected system conditions studied.

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REQUEST: SRTT-7  
WITNESS(S): HERLING  
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PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RELIABILITY

QUESTION:

The answer to S-PP-24 states that a knife edge or reliability refers to an operator's persistent need to take corrective action in real-time to control transmission line power flows within established reliability criteria limits. How many times have the operators been forced to operate on the knife edge of reliability over the past 5 years? What is the length of time in which the operators were required to operate on the knife edge of reliability?

ANSWER:

Each time a facility is removed from service unexpectedly, or when a transmission facility approaches its respective operating limit, the system operator must take prompt action to ensure that the transmission system remains within reliability limitations. Failure to do so could place the system on the knife edge of reliability. PJM does not know how many times in the past 5 years the operators have operated in this condition. PJM does not know what length of time operators were required to operate in this condition.

The reference to operating on the knife edge of reliability is descriptive of the general condition where the operators frequently must operate to transmission constraints with limited options with which to resolve those constraints. As such conditions become more severe, system operators must rely on emergency operating procedures which entail taking actions up to and including interruption of customer load. The degree to which a transmission system is operationally constrained is an indicator of impending reliability criteria violations. The conditions in the Northern New Jersey area have been subject to persistent congestion on a number of different transmission facilities over recent years. There is no specific indicator of when the system would be viewed to be at the knife edge of reliability. Therefore, PJM cannot quantify how many times, nor over what length of time, operators were required to operate in this condition.

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REQUEST: SRTT-8  
WITNESS(S): HERLING / REYNOLDS  
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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
LOAD FORECAST, DEMAND RESPONSE, ENERGY EFFICIENCY

QUESTION:

The answer to S-PP-1 states that PJM did not include BPU approved demand response and EE programs in its 2009 load forecast model. If PJM did include the BPU approved demand response and EE programs in its forecast model, what would be the estimated reduction in the peak load forecast? Please provide an estimation of the reduction in the peak load forecast for the years 2012 through 2020.

ANSWER:

PJM did not analyze what the estimated reduction in peak load forecast would be if the BPU approved programs were included in its forecast. Information is not available regarding the proposed BPU programs which would identify the parameters under which such programs would actually provide reduction in electricity usage. For example, time of day, number of times per day, number of times per season that programs are available; time to implement; assurance that reductions will be available at the time when the PJM system operator requires them. When such information is available, and a commitment is made by the customer, through the RPM auction, to provide such reduction in load, then PJM will include the cleared commitment in its analysis.

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REQUEST: SRTT-9  
WITNESS(S): HERLING  
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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RETOOL

QUESTION:

Will PJM perform a retool analysis for the transmission line and account for the EE that has cleared in the May 2009 BRA RPM auction? If yes, then please produce it as soon as practicable. If no, then why not?

ANSWER:

Yes. Once the results from the auction are available, PJM will begin its retool analysis. Results from this retool analysis are expected to be available by the end of 2009.

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REQUEST: SRTT-10  
WITNESS(S): HERLING  
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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RETOOL

QUESTION:

The answer to S-ENR-87 states that PJM is currently conducting its 2009 RTEP re-tool using updated load forecasting data as well as updated data regarding generation, demand response, and transmission topology. When will this re-tool analysis be completed? What updated load forecasting data is included in the re-tool analysis? How likely is it that the in-service date of the project will change due to the re-tool analysis?

ANSWER:

PJM completed its initial analysis of the 2012 system in January 2009 and found that the Susquehanna-Roseland Project is still required in 2012. This analysis used the 2009 PJM Load Forecast. See 1/21/09 TEAC presentation at: <http://www.pjm.com/committees-and-groups/committees/teac.aspx> Select "Past Meeting Material"

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REQUEST: SRTT-11  
WITNESS(S): HERLING  
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PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
CAPACITY, NEED

QUESTION:

Please model or provide an estimate of the normal, off-normal, and peak capacity for the Kittatinny-Newton, Newton-Montville, and Montville-Roseland circuits in the year 2012 with and without all new projected exports to New York. Please model or provide an estimate for the Kittatinny-Newton, Newton-Montville, and Montville-Roseland circuits with and without the Susquehanna-Roseland Transmission line in service.

ANSWER:

PJM does not understand what is meant by the terms “normal, off-normal and peak capacity”. PJM assumes that the question refers to the transmission line loadings at normal, off-peak and peak load conditions. PJM only performed analysis at peak load conditions, and estimates that the flows on the three circuits identified were 834, 735 and 527 MVA respectively during peak load conditions with the exports to New York based on Firm Transmission Service contracts in place and without the Susquehanna-Roseland line. With the Susquehanna-Roseland line in service, the flows on the three circuits identified were below 75% of their applicable rating and thus, the actual flow values were not captured. Therefore, PJM cannot provide that information. PJM did not conduct any analysis without projected exports to New York.

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REQUEST: SRTT-12  
WITNESS(S): HERLING  
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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
NERC RELIABILITY VIOLATIONS

QUESTION:

Are any of the identified 21 reliability violations caused, either in whole or in part, by other transmission upgrades that have been or will be made prior to the projected in service date of the Susquehanna-Roseland Line?

ANSWER:

No.

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REQUEST: SRTT-13  
WITNESS(S): HERLING  
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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
NERC RELIABILITY VIOLATIONS

QUESTION:

Are there any new reliability violations that will be caused, either in whole or in part, by the construction of the Susquehanna-Roseland Line? If so, please identify such violations.

ANSWER:

None that have been identified. When PJM identifies solutions to existing reliability criteria violations, PJM tests the entire system to ensure that no other new violations are created. If any such new violations are identified, the solution would be adjusted or additional solutions would be proposed.

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REQUEST: SRTT-14  
WITNESS(S): HERLING  
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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
LOAD FORECAST, RELIABILITY VIOLATIONS

QUESTION:

Have there been any sensitivity analyses done with respect to the load forecasting data used in the projections for the reliability violations? If yes, then please produce it as soon as practicable. If no, then why not?

ANSWER:

No. PJM has specific reliability criteria which it uses to determine if the system as planned will meet NERC Reliability Standards. Sensitivity analyses were not performed with respect to varying load forecasts.

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REQUEST: SRTT-15  
WITNESS(S): HERLING  
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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
AVAILABLE GENERATION, RELIABILITY VIOLATIONS

QUESTION:

Have there been any sensitivity analyses done with respect to the generation available for dispatch used in the projections for the reliability violations? If yes, then please produce all analyses as soon as practicable. If no, then why not?

ANSWER:

Yes. This analysis related to Oyster Creek and Bergen generation and was reported to the TEAC at their 5/9/07 meeting and can be accessed at: <http://www.pjm.com/committees-and-groups/committees/teac.aspx> Select "Past Meeting Material"

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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
DEMAND RESPONSE, RELIABILITY VIOLATIONS

QUESTION:

Have there been any sensitivity analyses done with respect to demand response available for use in the projections for the reliability violations? If yes, then please produce all analyses as soon as practicable. If no, then why not?

ANSWER:

No. PJM has specific reliability criteria which it uses to determine if the system as planned will meet NERC Reliability Standards. Sensitivity analyses were not performed with respect to varying demand response values.

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REQUEST: SRTT-17  
WITNESS(S): HERLING  
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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
TRANSMISSION TOPOLOGY

QUESTION:

Have there been any sensitivity analyses done with respect to the transmission topology used in the projections for the reliability violations? If yes, then please produce all analyses as soon as practicable. If no, then why not?

ANSWER:

Yes. This analysis specifically addressed the O-66 project and was reported to the TEAC at their 5/9/07 meeting and can be accessed at: <http://www.pjm.com/committees-and-groups/committees/teac.aspx> Select "Past Meeting Material"

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REQUEST: SRTT-18  
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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
CONGESTION

QUESTION:

Please provide the amount of congestion measured in the percentage of time that the flow or schedule exceeds 75% of the path transfer capability on the hour during the last five years for the circuits identified in the answer to S-ENR-66.

ANSWER:

PJM does not calculate the value requested, nor does PJM maintain the historical actual minute-to-minute operational data - actual flows, contingency flows, facility ratings – necessary to calculate the specific requested information. The aforementioned notwithstanding, PJM Annual State of the Market reports produced by PJM's Market Monitor, Monitor Analytics contain zonal summary congestion information. Reports dating back to 1999 can be found via the following URL link: [http://www.monitoringanalytics.com/reports/PJM\\_State\\_of\\_the\\_Market/2008.shtml](http://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2008.shtml)

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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
CONGESTION

**QUESTION:**

Please provide the amount of congestion measured in the percentage of time that the flow or schedule exceeds 90% of the path transfer capability on the hour during the last five years for the circuits identified in the answer to S-ENR-66.

**ANSWER:**

See response to SRTT-18.

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REQUEST: SRTT-20  
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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
CONGESTION

**QUESTION:**

Please provide the amount of congestion measured in the percentage of time that the flow or schedule exceeds 99% of the path transfer capability on the hour during the last five years for the circuits identified in the answer to S-ENR-66.

**ANSWER:**

See response to SRTT-18.

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REQUEST: SRTT-21  
WITNESS(S): HERLING / REYNOLDS  
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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RETOOL

QUESTION:

The answer to S-ENR-87 states that PJM is currently conducting its 2009 RTEP re-tool, using updated load forecasting data. Which load forecasting data is PJM using? How has that data been updated? When was the data last updated?

ANSWER:

PJM used the 2009 Load Forecast in this analysis which was based on the most recent econometric data available and which was published in January 2009.

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REQUEST: SRTT-22  
WITNESS(S): HERLING  
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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
DEMAND RESPONSE, NYISO, MODELING

QUESTION:

The answer to S-PP-26 states that PJM does not maintain information on how other RTOs use demand response in their system operations. Does this mean that PJM did not model any demand response in any other balancing authority, and specifically in the NYISO when modeling the reliability criteria that are driving the need for this transmission line? If the NYISO can implement comprehensive demand response during the peak hour periods, should this be relevant in PJM's modeling?

ANSWER:

Models for systems external to PJM are provided each year, by those regions, for inclusion in the PJM RTEP analysis. These models included demand response based on the criteria employed within each of those external systems. However, PJM does not assume that demand response programs in systems external to PJM, including the NYISO, will be implemented during PJM emergency operations. PJM demand response programs can only be implemented during PJM operational emergencies. During evaluations of compliance with load deliverability criteria, PJM assumes that the area under test is modeled at a 90/10 peak load, representing emergency conditions, and implements demand response in that area. PJM assumes that all other areas within PJM and external to PJM are not experiencing emergency conditions. PJM, therefore, does not interrupt demand response customers in any areas outside of the test area.

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REQUEST: SRTT-23  
WITNESS(S): MCGLYNN  
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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
NERC RELIABILITY VIOLATIONS

QUESTION:

Question S-ENR-6 requested that PSE&G identify all violations of NERC reliability criteria that have occurred over the last (3) years. Please provide this information. If there have not been any NERC reliability violations, please state so.

ANSWER:

PJM has had one confirmed violation of EOP-005, System Restoration Plans, which was of an administrative nature. As this violation occurred in May of 2007, prior to the implementation of the mandatory and enforceable NERC Reliability Standards in June 2007, there were no sanctions or fines imposed and the report is not publicly available.

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REQUEST: SRTT-24  
WITNESS(S): MCGLYNN  
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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
CONSTRUCTION

QUESTION:

How does PJM address the Category C contingency violation that occurs by placing a 230kV and a 500kV circuit on a single tower line? Refer to answer S-PP-31.

ANSWER:

PJM tests all double circuit tower line outages under NERC Category C5. If violations are identified, transmission upgrades are identified through the RTEP to return the system to compliance with that criteria.

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REQUEST: SRTT-25  
WITNESS(S): MCGLYNN  
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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RELIABILITY, MODELING

QUESTION:

The answer to S-PP-37 states PJM would need to know which specific buses would have load reduced and by how much in order to determine what would happen if peak consumer demand were lowered. Assuming the same new and/or retiring generation and the same merchant transmission that PJM assumed when it modeled the 23 reliability violations at issue, can PJM identify or model which specific buses would require a reduction in load and how much that reduction in load would need to be in order to alleviate each violation?

ANSWER:

PJM has not conducted such an analysis. Conducting such an analysis would require additional work to be performed by PJM necessitating speculation on PJM's part with respect to the selection of specific busses and MWs on which to reduce customer load.

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REQUEST: SRTT-26  
WITNESS(S): MCGLYNN  
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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RELIABILITY, OVERLOADS

QUESTION:

If the electrical result violation described as “Greystone Q – Whippany 230kV exceeds its normal rating and overloads (2012)” were the only violation identified, how else could it be solved?

ANSWER:

In theory, each violation which was identified might be able to be resolved through some facility enhancement such as reconductoring or upgrading substation equipment. However, as can clearly be seen by the number of violations identified in SRTT-26 through SRTT-49, the conditions in Eastern Pennsylvania and Northern New Jersey are so persistent and widespread that local solutions to each individual violation is not an appropriate solution for this wide-area problem. Such local solutions would likely be expensive, require significant transmission outages of the very circuits which are expected to be overloaded, and would not provide the additional transmission capability so clearly needed for this region of PJM. Further, more than 180 transmission upgrades have already been approved and are either in service or under construction in New Jersey. Most local solutions have already been implemented. Thus, PJM did not assess how each of these individual violations might be individually resolved. Rather, PJM assessed the needs from a system-wide perspective and selected the Susquehanna-Roseland line as a backbone solution which would resolve all twenty-three (23) these violations.

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REQUEST: SRTT-27  
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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RELIABILITY, OVERLOADS

QUESTION:

If the electrical result violation described as “Branchburg – Readington 230kV exceeds its emergency rating and overloads (2012)” were the only violation identified, how else could it be solved?

ANSWER:

See response to SRTT-26.

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REQUEST: SRTT-28  
WITNESS(S): MCGLYNN  
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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RELIABILITY, OVERLOADS

QUESTION:

If the electrical result violation described as “Readington – Roseland 230kV exceeds its emergency rating and overloads (2012)” were the only violation identified, how else could it be solved?

ANSWER:

See response to SRTT-26.

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REQUEST: SRTT-29  
WITNESS(S): MCGLYNN  
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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RELIABILITY, OVERLOADS

QUESTION:

If the electrical result violation described as “Bushkill – Kittatinny 230kV exceeds its emergency rating and overloads (2013)” were the only violation identified, how else could it be solved?

ANSWER:

See response to SRTT-26.

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REQUEST: SRTT-30  
WITNESS(S): MCGLYNN  
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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RELIABILITY, OVERLOADS

QUESTION:

If the electrical result violation described as “Montville - Roseland 230kV exceeds its emergency rating and overloads (2014)” were the only violation identified, how else could it be solved?

ANSWER:

See response to SRTT-26.

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REQUEST: SRTT-31  
WITNESS(S): MCGLYNN  
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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RELIABILITY, OVERLOADS

QUESTION:

If the electrical result violation described as “Whippany-Roseland 230kV exceeds its emergency rating and overloads (2014)” were the only violation identified, how else could it be solved?

ANSWER:

See response to SRTT-26.

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PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RELIABILITY, OVERLOADS

QUESTION:

If the electrical result violation described as “Martin Creek – Portland 230kV exceeds its normal rating and overloads (2014)” were the only violation identified, how else could it be solved?

ANSWER:

See response to SRTT-26

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PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RELIABILITY, OVERLOADS

QUESTION:

If the electrical result violation described as “Richmond - Camden 230kV exceeds its emergency rating and overloads (2015)” were the only violation identified, how else could it be solved?

ANSWER:

See response to SRTT-26

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PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RELIABILITY, OVERLOADS

QUESTION:

If the electrical result violation described as “W. Wharton – Greystone 230kV exceeds its emergency rating and overloads (2016)” were the only violation identified, how else could it be solved?

ANSWER:

See response to SRTT-26

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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RELIABILITY, OVERLOADS

QUESTION:

If the electrical result violation described as “Kittatinny – Pohatcong 230kV exceeds its emergency rating and overloads (2016)” were the only violation identified, how else could it be solved?

ANSWER:

See response to SRTT-26

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PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RELIABILITY, OVERLOADS

QUESTION:

If the electrical result violation described as “Kittatinny - Newton 230kV exceeds its emergency rating and overloads (2017)” were the only violation identified, how else could it be solved?

ANSWER:

See response to SRTT-26

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PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RELIABILITY, OVERLOADS

QUESTION:

If the electrical result violation described as “Martins Creek – Morris Park 230kV exceeds its emergency rating and overloads (2017)” were the only violation identified, how else could it be solved?

ANSWER:

See response to SRTT-26

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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RELIABILITY, OVERLOADS

QUESTION:

If the electrical result violation described as “East Windsor – Smithburg 230kV exceeds its emergency rating and overloads (2017)” were the only violation identified, how else could it be solved?

ANSWER:

See response to SRTT-26

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PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RELIABILITY, OVERLOADS

QUESTION:

If the electrical result violation described as “Waneeta - Richmond 230kV exceeds its emergency rating and overloads (2017)” were the only violation identified, how else could it be solved?

ANSWER:

See response to SRTT-26

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PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RELIABILITY, OVERLOADS

QUESTION:

If the electrical result violation described as “Newton – Lk Iliff 230kV exceeds its emergency rating and overloads (2018)” were the only violation identified, how else could it be solved?

ANSWER:

See response to SRTT-26

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REQUEST: SRTT-41  
WITNESS(S): MCGLYNN  
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PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RELIABILITY, OVERLOADS

QUESTION:

If the electrical result violation described as “Portland - Kittinanny 230kV exceeds its emergency rating and overloads (2018)” were the only violation identified, how else could it be solved?

ANSWER:

See response to SRTT-26

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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RELIABILITY, OVERLOADS

QUESTION:

If the electrical result violation described as “Greystone Q – Whippany 230kV exceeds its normal rating and overloads (2019)” were the only violation identified, how else could it be solved?

ANSWER:

See response to SRTT-26

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PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RELIABILITY, OVERLOADS

QUESTION:

If the electrical result violation described as “Lk Iliff - Montville 230kV exceeds its emergency rating and overloads (2019)” were the only violation identified, how else could it be solved?

ANSWER:

See response to SRTT-26

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SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RELIABILITY, OVERLOADS

QUESTION:

If the electrical result violation described as “Hosenack - Elroy 230kV exceeds its emergency rating and overloads (2019)” were the only violation identified, how else could it be solved?

ANSWER:

See response to SRTT-26

RESPONSE TO STAFF  
REQUEST: SRTT-45  
WITNESS(S): MCGLYNN  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RELIABILITY, OVERLOADS

QUESTION:

If the electrical result violation described as “Glen Gardner – Chester 230kV exceeds its emergency rating and overloads (2019)” were the only violation identified, how else could it be solved?

ANSWER:

See response to SRTT-26

RESPONSE TO STAFF  
REQUEST: SRTT-46  
WITNESS(S): MCGLYNN  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RELIABILITY, OVERLOADS

QUESTION:

If the electrical result violation described as “Portland - Greystone 230kV exceeds its emergency rating and overloads (2020)” were the only violation identified, how else could it be solved?

ANSWER:

See response to SRTT-26

RESPONSE TO STAFF  
REQUEST: SRTT-47  
WITNESS(S): MCGLYNN  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RELIABILITY, OVERLOADS

QUESTION:

If the electrical result violation described as “Coxcorner-Lumberton230kV exceeds its emergency rating and overloads (2020)” were the only violation identified, how else could it be solved?

ANSWER:

See response to SRTT-26

RESPONSE TO STAFF  
REQUEST: SRTT-48  
WITNESS(S): MCGLYNN  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RELIABILITY, OVERLOADS

QUESTION:

If the electrical result violation described as “Gilbert - Morristown 230kV exceeds its emergency rating and overloads (2021)” were the only violation identified, how else could it be solved?

ANSWER:

See response to SRTT-26

RESPONSE TO STAFF  
REQUEST: SRTT-49  
WITNESS(S): MCGLYNN  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RELIABILITY, OVERLOADS

QUESTION:

If the electrical result violation described as “Bridgewater – Middlesex 230kV exceeds its emergency rating and overloads (2021)” were the only violation identified, how else could it be solved?

ANSWER:

See response to SRTT-26

RESPONSE TO STAFF  
REQUEST: SRTT-50  
WITNESS(S): MCGLYNN  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RELIABILITY

QUESTION:

Looking at the maps, there appears to be, for about 1 mile, near Lake Hopatcong, a third transmission line that shares the same right-of-way or is located adjacent to the right-of-way associated with this line. Have there been any studies to address the possibility of all three of these lines tripping simultaneously?

ANSWER:

PJM evaluates the loss of all transmission lines in a common right-of-way under NERC Category D in Planning Standard TPL-004. TPL-004 does not, however, require the transmission system to be upgraded unless the consequences of non-compliance, in terms of cascading outages to load customers, are deemed to be significant. The third transmission line referenced above is the Branchburg to Ramapo 500kV transmission line. PJM has evaluated this configuration and no further action is required pursuant to NERC Category D in Planning Standard TPL-004.

RESPONSE TO STAFF  
REQUEST: SRTT-51  
WITNESS(S): MCGLYNN  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
EXPORT CAPABILITY

QUESTION:

How much incremental transmission export capability to New York is projected or assumed to be in service during the summer of each year from 2011 until 2022?

ANSWER:

PJM does not determine transmission export capability to New York in the course of its RTEP analyses. PJM calculates TTC and ATC on the PJM-New York interface, but only for the next eighteen months.

RESPONSE TO STAFF  
REQUEST: SRTT-52  
WITNESS(S): MCGLYNN  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
NERC RELIABILITY VIOLATIONS

QUESTION:

For exhibit PFM-1, please provide a map depicting the location of each projected violation for each year from 2012 through 2020. Also include in the depiction the electrical occurrence that would cause the violation. There should be at least 11 maps: one for each year.

ANSWER:

A map showing all of these violations is contained in the 2008 RTEP Report, Map 4.3 on page 64. The first year in which each violation occurs can be found in Exhibit PFM-1 attached to the direct testimony of Paul F. McGlynn.

PJM is not in possession of 11 separate maps for each year referenced in the question above.

RESPONSE TO STAFF  
REQUEST: SRTT-53  
WITNESS(S): KHADR  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
ALTERNATIVES, NERC RELIABILITY VIOLATIONS

QUESTION:

Describe the Company's evaluations of alternatives to transmission that could eliminate or postpone the projected NERC reliability violations.

ANSWER:

See direct pre-filed testimony of Esam A.F. Khadr at pages 28-29.

RESPONSE TO STAFF  
REQUEST: SRTT-54  
WITNESS(S): KHADR  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
ENERGY EFFICIENCY, DEMAND RESPONSE, GENERATION CAPACITY

QUESTION:

Has the company determined that no combination of demand response, energy efficiency, or additions of electric generation capacity in or near the locations where NERC reliability violations are projected to occur would eliminate or postpone each violation?

ANSWER:

Yes, based on the RTEP and retool analyses that were performed. Both the Demand Response and energy efficiency that were forecasted at the time of the analysis were modeled in the original RTEP analysis as well as the retools. Similarly, forecasted generation retirements and generation build is modeled in the RTEP analysis and retools. See also the testimony of Esam A.F. Khadr at pages 28-29.

RESPONSE TO STAFF  
REQUEST: SRTT-55  
WITNESS(S): KHADR  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RELIABILITY, OUTAGES

QUESTION:

An outage of the Whippany-Roseland 230kV line creates two (2) reliability violations in 2012 and six (6) reliability violations by the year 2019. How likely is it that there would be an outage of the Whippany- Roseland 230kV line? When was the Whippany-Roseland 203kV line last maintained or worked on? When was it built?

ANSWER:

The probability of an outage on this circuit is dependent upon many factors, such as circuit length exposure, physical terrain, structure grounding integrity, general equipment condition, etc. Historical information from FirstEnergy records indicate that this line has experienced one outage since 2005, with the most recent interruption occurring June 2, 2005.

A comprehensive visual inspection of the FirstEnergy portion of the Whippany-Roseland 230 kV line was last performed on September 2, 2005 with the last aerial patrol inspection performed October 18, 2008.

FirstEnergy data indicates the line was designed in or around 1958.

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RELIABILITY

QUESTION:

Other lines that create multiple violations are the Portland-Martins Creek 230kV line and the Glen Gardner – Gilbert 230kV line. How likely is it that there would be an outage of the either of these lines? When were these lines last maintained or worked on? When were they built?

ANSWER:

The probability of an outage on both circuits is dependent upon many factors, such as circuit length exposure, physical terrain, structure grounding integrity, general equipment condition, etc.

**Portland-Martins Creek 230kV line:**

The PPL Electric Utilities portion of the Martins Creek-Portland 230 kV line was last maintained on August 22, 2006 and last inspected on March 5, 2008.

Historical information from PPL Electric Utilities records indicate that this line has experienced seven (7) outages since 1975, with the most recent interruption occurring in 2002.

PPL Electric Utilities Data indicates the line was placed in service in 1974.

Historical information from FirstEnergy records indicates that Portland-Martins Creek 230kV line has not experienced an interruption in the last 4 years.

The First Energy portion of the Portland-Martins Creek 230kV line had a comprehensive visual inspection performed August 6, 2005 and an aerial patrol inspection performed May 15, 2009.

FirstEnergy Data indicates its portion of the line was designed in 1973.

**Glen Gardner - Gilbert 230kV line:**

Historical information from FirstEnergy records indicates that Glen Gardner-Gilbert line last experienced an interruption on August 7, 2007.

The Glen Gardner-Gilbert 230 kV line was last maintained on August 19, 2008 with a comprehensive visual inspection performed August 19, 2005 and an aerial patrol inspection performed May 13, 2009.

FirstEnergy Data indicates the line was designed in 1963.

RESPONSE TO STAFF  
REQUEST: SRTT-57  
WITNESS(S): KHADR  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
CAPACITY

QUESTION:

The answer to S-ENR-47 states that line loading varies significantly over time and refers to Exhibit S-ENR-47. It also provides the summer normal capacity of the Kittatinny-Newton, Newton-Montville, and Montville-Roseland circuits. Please provide the off-normal summer and peak summer capacity of these same three circuits. Please provide the maximum capacity that is feasible for these three existing circuits. Please provide the number of hours where these three circuits operated within 10% of their maximum capacity.

ANSWER:

The meaning of the terms “off-normal summer capacity”, “peak summer capacity” and maximum capacity” is not clear. Notwithstanding, for transmission planning studies, PSE&G uses summer normal and summer emergency ratings. The system is planned so that each circuit flow does not exceed its normal summer ratings during normal system conditions (all transmission facilities in-service). The system is also planned so that each transmission facility does not exceed its emergency rating following an outage of a transmission or generation facility and that the system operator, following the outage, can reduce the flow on the circuit to below the normal rating in four hours. The following are the summer normal and summer emergency ratings for each circuit:

|                    | Summer normal | Summer emergency |
|--------------------|---------------|------------------|
| Kittatinny-Newton  | 732MVA        | 887MVA           |
| Newton-Montville   | 537MVA        | 695MVA           |
| Montville-Roseland | 422MVA        | 538MVA           |

RESPONSE TO STAFF  
REQUEST: SRTT-58  
WITNESS(S): KHADR  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
LEAKAGE

QUESTION:

In light of the May 4, 2009 Board Order in Docket No. EO08030150 directing Staff to seek information from Petitioner to enable the Board to evaluate the effect of a development upon Statewide Greenhouse Gas Emissions for any proceeding under N.J.S.A. 40:55D-19, please provide an estimate of the amount of leakage that Petitioner believes may result from the implementation of the project for each full calendar year from 2013 through 2020.

ANSWER:

PSE&G objects to this question on the grounds that (i) the above-referenced Board RGGI proceeding focused upon generation source emissions, rather than “emissions” from transmission projects; and (ii) even if applicable to transmission projects, the Board’s May 4, 2009 order cannot be retroactively applied to the pending Susquehanna-Roseland 40:55D-19 Petition.

Notwithstanding this objection, Petitioner has not yet developed an estimate of the amount of leakage that may result from the implementation of the Project.

RESPONSE TO STAFF  
REQUEST: SRTT-59  
WITNESS(S): KHADR  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
LEAKAGE

QUESTION:

In light of the May 4, 2009 Board Order in Docket No. EO08030150 directing Staff to seek information from Petitioner to enable the Board to evaluate the effect of a development upon Statewide Greenhouse Gas Emissions for any proceeding under N.J.S.A. 40:55D-19, please describe Petitioner's efforts to estimate the amount of leakage that may result from the implementation of the project.

ANSWER:

See response to SRTT-58.

RESPONSE TO STAFF  
REQUEST: SRTT-60  
WITNESS(S): KHADR  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
LEAKAGE

QUESTION:

In light of the May 4, 2009 Board Order in Docket No. EO08030150 directing Staff to seek information from Petitioner to enable the Board to evaluate the effect of a development upon Statewide Greenhouse Gas Emissions for any proceeding under N.J.S.A. 40:55D-19, please describe Petitioner's efforts to obtain from PJM or others an estimate of the amount of leakage that may result from the implementation of the project.

ANSWER:

PSE&G objects to this question on the grounds that (i) the above-referenced Board RGGI proceeding focused upon generation source emissions, rather than "emissions" from transmission projects; and (ii) even if applicable to transmission projects, the Board's May 4, 2009 order cannot be retroactively applied to the pending Susquehanna-Roseland 40:55D-19 Petition. Notwithstanding this objection, Petitioner has not yet obtained from PJM or others an estimate of the amount of leakage that may result from the implementation of the Project.

RESPONSE TO STAFF  
REQUEST: SRTT-61  
WITNESS(S): KHADR  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RATE IMPACT

QUESTION:

The answer to S-PP-66 provides a breakdown of the cost allocation for the transmission line. Ignoring any change in energy costs due to projected reduced congestion, please provide what the impact of this line would be for the average ratepayer.

ANSWER:

Based upon the current estimated cost of \$750 million, the average PSE&G residential electric customer's bill would increase by two tenths of 1 percent, or about \$2.70 a year. [Note: This only represents the increase for the transmission component of the customer's bill, and does not reflect any possible decrease in congestion charges which would affect energy prices.]

RESPONSE TO STAFF  
REQUEST: SR TT-62  
WITNESS(S): KHADR  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
RELIABILITY, MODELING

QUESTION:

The answer to S-ENR-119 states that 230kV facilities must remain in operation when this Project is complete. The answer to S-ENR-121 states that PJM did not undertake an analysis of an alternative model that included only a new 500kV circuit replacing the existing 230kV circuit. Did PSE&G undertake such an analysis? If not, how does PSE&G know that the 230kV facilities “must” remain in operation? If the 230kV line were removed and replaced with a 500kV, what other additional system upgrades would be necessary to continue to meet NERC reliability standards?

ANSWER:

As stated in the response to S-ENR-120, the 230kV circuit is necessary to serve load connected to the Newton, Lake Elf and Montville 230kV stations. If the 230kV line is eliminated, then a new 500kV switching station and two new 500/230kV transformers would be needed at each of the above 230kV stations to step down the 500kV and supply the local load. This is not practical for two reasons (a) space and permitting issues, (b) the 500kV system is not designed to supply substations along its route and serve local load at 34.5kV voltage level. 500kV circuits are intended to move large amounts of power over long distances and act as a backbone.

RESPONSE TO STAFF  
REQUEST: SRTT-63  
WITNESS(S): CROUCH  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
DESIGN AND CONSTRUCTION

QUESTION:

PPL appears to be designing its structures to allow for an additional expansion of another 500kV line in the future, should that become necessary. The answer to S-ENR-133 states that PSE&G has no plans to add any additional circuits to this transmission line. The answer to S-PP-70 states that the transmission structures have been designed to accommodate two (2) 500kV circuits. Even though PSE&G has no plans at this time, please clarify that the proposed structures would allow PSE&G (or another entity) to replace the 230kV circuits with 500kV circuits in the future without additional or new transmission structures.

ANSWER:

The proposed double circuit structures are capable of supporting 2 – 500kV circuits, if necessary in the future. Since it is currently not known what the future 500kv line alignment would be, it is difficult to state unequivocally that no new structures would be necessary.

RESPONSE TO STAFF  
REQUEST: SRTT-64  
WITNESS(S): HERLING  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
DESIGN, RELIABILITY

QUESTION:

The answer to S-PP-38 states that PJM did not attempt to identify whether upgrades to all of the facilities involved in the 23 violations would be sufficient to resolve all the reliability criteria violations identified. Why was this alternative not examined?

ANSWER:

See response to SRTT-26.

RESPONSE TO STAFF  
REQUEST: SRTT-65  
WITNESS(S): CROUCH  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
DESIGN AND CONSTRUCTION

**QUESTION:**

Please provide the difference in tower height along the transmission line. In other words, please provide one of the following: an organized list, workbook, chart, or map that accurately and easily displays the locations and heights of each existing tower structure compared with the proposed locations and heights of each proposed tower structure.

**ANSWER:**

For a list of the heights of existing structures, please see S-ENR-127. For the heights of proposed structures, please see S-ENR-135.

RESPONSE TO STAFF  
REQUEST: SRTT-66  
WITNESS(S): REYNOLDS  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
LOAD FORECAST

QUESTION:

The answer to S-PP-49 states that PJM has developed a number of applications to facilitate comparison of the current forecast to previous forecasts and to actual data, and to evaluate the impact of actual weather and revised economic data. What and where are these applications? Have they been successful? What were the results? Please provide a copy of these applications and their results.

ANSWER:

The comparison reports reside on PJM's internal computer network. A copy of a recent report is attached as Exhibit SRTT-66. Due to the report's size, a CD has been provided to the requester. The report provides accurate and informative comparisons for internal use by PJM personnel as a tool in developing load forecasts.

RESPONSE TO STAFF  
REQUEST: SRTT-67  
WITNESS(S): REYNOLDS  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
LOAD FORECAST

QUESTION:

The answer to S-PP-51 states that PJM made a decision to use only weather stations that are maintained by the National Weather Service and use the Automated Surface Observing System. There are eight (8) weather stations that are maintained by the National Weather Service and use the Automated Surface Observing System in New Jersey. Accessible through <http://www.ncdc.noaa.gov/oa/climate/stationlocator.html>. Why does PJM decide to use only two of these?

ANSWER:

See response to SRTT-68.

RESPONSE TO STAFF  
REQUEST: SRTT-68  
WITNESS(S): REYNOLDS  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
LOAD FORECAST

QUESTION:

The answer to S-PP-51 states that PJM requested input from utility forecasters to identify the weather stations used for their forecasting and analysis. Did PJM obtain a response from the utility forecasters? If so, did PJM follow the recommendation provided by the input from the utility forecasters?

ANSWER:

Yes, PJM received responses from the utility forecasters and elected to use the weather station(s) used by the local utilities, with the exception of the RECO zone. RECO forecasters use a weather station located in White Plains, NY; PJM chose to use the weather station at Newark International Airport (EWR).

RESPONSE TO STAFF  
REQUEST: SRTT-69  
WITNESS(S): REYNOLDS  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
LOAD FORECAST

QUESTION:

The answer to S-PP-57 states that Load Management values are held constant for all years beyond the last year for which there is a commitment, which is consistent with the PJM planning process. Why are the Load Management values held constant each year while the load increases each year?

ANSWER:

PJM believes that Load Management does not necessarily grow in concert with peak load, but will be more closely related to the value received for Demand Resource/Interruptible Load for Reliability in the RPM market, as well as other incentives available through state-mandated programs.

RESPONSE TO STAFF  
REQUEST: SRTT-70  
WITNESS(S): REYNOLDS  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
LOAD FORECAST

QUESTION:

The answer to S-PP-61 states that PJM and/or the distribution companies estimate voltage reductions after any voltage reduction is implemented and that the impact estimates are used in the development of historic unrestricted load, which is an input into the load forecast model. How often have these load voltage reductions occurred in the past 5 years? Please provide explanations for each occurrence.

ANSWER:

There have been two voltage reductions in the last five years. On July 27, 2005, a 5% voltage reduction occurred and affected the APS, BGE, DOM, JCPL, PECO, PEPCO, PPL and PS zones. On August 8, 2007, a 5% voltage reduction occurred and affected all the zones in the Mid-Atlantic region. In both cases PJM initiated the voltage reduction in response to a capacity deficiency, to reduce load to provide a sufficient amount of reserve to maintain tie flow schedules and preserve limited energy sources.

RESPONSE TO STAFF  
REQUEST: SRTT-71  
WITNESS(S): RIBARDO  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
PUBLIC OUTREACH

QUESTION:

The answer to S-ENR-60 provides a copy of all public comments received by PSE&G at all the public meetings held pertaining to the project. Please summarize the major concerns provided in those comments. Please provide a general description of who provided those comments.

ANSWER:

See attached exhibit SRTT-71 providing a breakdown of the concerns expressed by the public to PSE&G to date.

RESPONSE TO STAFF  
REQUEST: SRIT-72  
WITNESS(S): MILLIES  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
DESIGN AND CONSTRUCTION

QUESTION:

What will be done with the old pole structures?

ANSWER:

The old lattice towers will be deconstructed and sold for scrap.

RESPONSE TO STAFF  
REQUEST: SRTT-73  
WITNESS(S): JACOBBER / RIBARDO  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
DESIGN AND CONSTRUCTION, SWITCHING STATIONS

QUESTION:

The answer to S-ENR-56 states that additional electric and magnetic field calculations along the boundaries of the East Hanover and Jefferson switching stations will be completed when the switching station final designs are complete to ensure the final design complies with electric field guidelines. When will those designs be completed?

ANSWER:

Switching station conceptual designs are scheduled to be completed by the end of August 2009 to support the development of EMF calculations for the switching station sites. Final design of the proposed switching stations is not scheduled to be completed until August 2010.

RESPONSE TO STAFF  
REQUEST: SRTT-74  
WITNESS(S): GIBBS  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
EASEMENTS

QUESTION:

The Answer to S-ENR-51 states that some of the easements that PSE&G acquired in or around 1927 have certain restrictions that do not permit PSE&G to construct both a 230kV and a 500kV transmission circuits on the ROW. Why were these restrictions placed on the easements in 1927? Does the concern from 1927 still exist today?

ANSWER:

PSE&G does not have any records that describe why there were any restrictions placed on easements when the easements were acquired in the late 1920s.

RESPONSE TO STAFF  
REQUEST: SRTT-75  
WITNESS(S): HALPERN  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
ROUTING

QUESTION:

Out of the three identified alternative routes (A, B, and C), which route had the least amount of impact on residential areas?

ANSWER:

The route selection criteria identified in section 2.4 of the Alternative Route Identification (“ARI”) Report are intended to minimize impacts on residential areas and other environmental resources. The ARI Report, submitted as JH-1, concluded that Alternative B would have the least amount of impact on residential areas.

RESPONSE TO STAFF  
REQUEST: SRTT-76  
WITNESS(S): MCGLYNN  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
DESIGN, RELIABILITY, ROUTING

QUESTION:

The answer to S-ENR-120 states that if the 500kV line trips, the 230kV circuit will be required to carry power into the PSE&G territory. Because of the chosen route, is the chance of both the 500kV and 230kV lines tripping simultaneously more than if another route were chosen because both the 500kV and 230kV lines are located on the same towers? Are there any studies that were completed to address this increased chance of both lines tripping simultaneously?

ANSWER:

PJM does not know what the probability is of both lines tripping simultaneously. No studies have been conducted regarding the probability of this occurrence. However, it is unlikely that a new, separate right-of-way could have been acquired for the new 500 kV line such that the new 500 kV line would not be on a common tower with an existing 230 kV line. Further, it is PJM's practice to look for opportunities to utilize existing tower lines and rights-of-way where possible to minimize the impact of new transmission infrastructure.

RESPONSE TO STAFF  
REQUEST: SRTT-77  
WITNESS(S): HERLING / REYNOLDS  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
LOAD MODELING

QUESTION:

PJM changed its load model in 2006. Does PJM or PSE&G have any support to show why the model chosen in 2006 is the best approach? Did PJM perform any sensitivity analyses comparing other models before it chose that particular load model in 2006? Did PJM vet the load model through its stakeholder process? Why did PJM choose 1998 as the beginning year in its load model?

ANSWER:

All these questions are addressed in the PJM Load/Energy Forecasting Model White Paper, which can be accessed at: <http://www.pjm.com/planning/resource-adequacy-planning/~//media/planning/res-adeq/load-forcast/forecast-model-whitepaper.ashx>  
Please refer to Exhibit JMR-1 attached to the direct testimony of John M. Reynolds.

RESPONSE TO STAFF  
REQUEST: SRTT-78  
WITNESS(S): REYNOLDS  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
LOAD MODELING

QUESTION:

Why does PJM use Moody's forecasting to assist it with its load modeling?

ANSWER:

PJM does not use Moody's Economy.com for assistance in load modeling. PJM acquires forecasts of numerous economic variables for the U.S., individual states and metropolitan areas from Moody's Economy.com, and currently uses estimates of Gross Metropolitan Product in the load forecast model. PJM does not have the resources required to produce independent economic forecasts for each of the metropolitan areas.

RESPONSE TO STAFF  
REQUEST: SRTT-79  
WITNESS(S): HERLING  
PAGE 1 OF 1  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
LOAD MODELING, RTEP

QUESTION:

Why did PJM change its RTEP modeling from a 5-year look ahead to a 15-year look ahead?  
When did PJM make this change? Why did PJM choose 15 years?

ANSWER:

PJM extended its planning horizon to 15 years for the first time in the 2006 RTEP in recognition of the need to identify future reliability criteria violations with sufficient lead time to be able to implement backbone transmission solutions where required.

RESPONSE TO STAFF  
REQUEST: SRTT-80  
WITNESS(S): MCGLYNN  
PAGE 1 OF 2  
SUSQUEHANNA-ROSELAND

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
LOAD MODELING

**QUESTION:**

Please provide a graphical representation of all the imports and exports into and out of the PSE&G Locational Deliverability Area (LDA) projected to be in service during the summer of each year from 2011 until 2022.

**ANSWER:**

PJM does not assume imports and exports into and out of LDAs (inter-zone interchanges) within PJM in power flow studies. Under RTO-wide dispatch and free-flowing ties between zones, this has no meaning.

The aforementioned notwithstanding, all inter-regional firm transmission services committed for the 2013 period were represented in the base case per the table below:

| <b>FROM</b> | <b>TO</b>                                       | <b>MW</b> |
|-------------|---|-----------|
| PJM         | Ameren  | 127       |
| PJM         | Cinergy   | 708       |
| PJM         | East Kentucky Power Cooperative                 | 0         |
| PJM         | First Energy                                    | 644       |
| PJM         | Illinois power                                  | 0         |
| PJM         | Louisville Gas & Electric Transmission Services | 137       |
| PJM         | Ohio Valley Electric Corporation                | -1853     |
| PJM         | Alliant Energy West                             | 264       |
| PJM         | Alliant Energy East                             | 155       |
| PJM         | Carolina Power & Light Company - East           | 270       |
| PJM         | Carolina Power & Light Company - West           | 250       |

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|       |  |      |
|-------|--|------|
| PJM   | Duke Energy Corporation                    | 63   |
| PJM   | Mid-American Energy<br>Company             | 1370 |
| PJM   | Michigan Electric<br>Coordinated Systems   | 574  |
| PJM   | Northern Indiana Public<br>Service Company | 0    |
| PJM   | New York ISO                               | 1957 |
| PJM   | Wisconsin Energy<br>Corporation            | 1215 |
| PJM   | Tennessee Valley<br>Authority              | 918  |
| TOTAL |  | 6799 |

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PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
CAPACITY

QUESTION:

Please provide a CETO/CETL analysis for the year 2012 for the following LDAs with and without the Susquehanna-Roseland transmission line in service: Northern PSEG, PSEG, EMAAC, MAAC. Please provide a CETO/CETL analysis for the same year and for the same LDAs excluding all new projected transmission export capability to New York. Please provide the same analysis for each year from 2012 until 2022.

ANSWER:

In the course of PJM's load deliverability analyses for Northern PSEG, PSEG, EMAAC, and MAAC, PJM typically imports emergency energy from New York. Notwithstanding, PJM has not performed deliverability studies excluding all new transmission export capability to New York for the years requested, other than the baseline RTEP analysis performed in 2007 for 2012. The reliability criteria violations identified in these analyses were presented to the PJM TEAC at the April 5, 2007 and May 9, 2007 meetings. The presentation materials are available at: <http://www.pjm.com/committees-and-groups/committees/teac.aspx> (Select "Past Meeting Material").