

**STATE OF NEW JERSEY
BOARD OF PUBLIC UTILITIES**

**In the Matter of the Petition of
Public Service Electric and Gas Company
for Approval of an Increase in Electric and Gas
Rates and for Changes in the Tariffs for
Electric and Gas Service, B.P.U.N.J.
No. 16 Electric and B.P.U.N.J. No. 16
Gas, and for Changes in Depreciation Rates,
Pursuant to N.J.S.A. 48:2-18,
N.J.S.A. 48:2-21 and N.J.S.A. 48:2-21.1, and
for Other Appropriate Relief**

BPU Docket Nos. _____

**DIRECT TESTIMONY
OF
HAROLD WALKER, III**

**CONCERNING
LEAD-LAG STUDY
AND NET ASSETS AND LIABILITIES ANALYSIS
FOR DETERMINATION OF OTHER CASH WORKING
CAPITAL**

**January 12, 2018
P-8**

Table of Contents

I. INTRODUCTION - 1 -

II. SCOPE OF TESTIMONY - 1 -

III. PRINCIPLES OF WORKING CAPITAL - 2 -

IV. SUMMARY OF OTHER WORKING CAPITAL CLAIM..... - 3 -

V. EXPLAINING A LEAD-LAG STUDY - 4 -

VI. RESULTS OF THE LEAD-LAG STUDY - 8 -

VII. NET ASSETS LIABILITY ANALYSIS - 18 -

VIII. RESULTS OF THE NET ASSETS LIABILITY ANALYSIS - 18 -

1 **PUBLIC SERVICE ELECTRIC AND GAS COMPANY**
2 **DIRECT TESTIMONY**
3 **OF**
4 **HAROLD WALKER, III**
5 **MANAGER FINANCIAL STUDIES,**
6 **GANNETT FLEMING VALUATION AND RATE CONSULTANTS L.L.C.**
7

8 **I. INTRODUCTION**

9 **Q. Please state your name and address.**

10 A. My name is Harold Walker, III. My business mailing address is P. O. Box 80794,
11 Valley Forge, Pennsylvania, 19484.

12 **Q. By whom are you employed?**

13 A. I am employed by Gannett Fleming Valuation and Rate Consultants, LLC as
14 Manager, Financial Studies.

15 **Q. What is your educational background and employment experience?**

16 A. My educational background, business experience and qualifications are provided
17 at the end of Exhibit P-8 as Appendix A.

18 **II. SCOPE OF TESTIMONY**

19 **Q. What is the purpose of your testimony?**

20 A. The purpose of my testimony is to recommend appropriate “other” working
21 capital allowances that Public Service Electric and Gas Company (“PSE&G” or the
22 “Company”) should be afforded an opportunity to earn on as part of its rate base claims
23 for their New Jersey Board of Public Utilities (“BPU”) jurisdictional operations. My
24 recommendations are based upon the results of lead-lag studies and the results of a net

1 assets and liabilities analyses conducted for PSE&G's BPU jurisdictional electric
2 distribution service operations and gas distribution service operations. It should be noted,
3 for the purposes of this testimony, reference to "PSE&G" or the "Company" refers to that
4 portion of PSE&G that are BPU jurisdictional operations. Further, reference to
5 "ELECTRIC" and "GAS" refers to that portion of PSE&G that are BPU jurisdictional
6 electric distribution service operations and gas distribution service operations,
7 respectively.

8 **Q. Have you prepared an exhibit presenting the results of your studies?**

9 A. Yes. I have prepared 27 Schedules identified as Schedule HW-1 through
10 Schedule HW-27 summarizing the Company's other working capital claim in this
11 proceeding that are contained within Exhibit P-8.

12 **III. PRINCIPLES OF WORKING CAPITAL**

13 **Q. Would you please explain the ratemaking principles concerning the inclusion**
14 **of working capital as an element of rate base?**

15 A. Yes. The working capital allowance is a component of rate base. A utility's need
16 for working capital was first recognized in the noted Supreme Court case, *Smyth v.*
17 *Ames*.¹ Among the many benchmarks established in the case was the "property devoted
18 to public use" doctrine as a basis for fixing rates. The case recognized that among the
19 matters to be considered in determining the value of property used was "the sum required
20 to meet operating expenses." Since that time working capital has generally been

¹ *Smyth v. Ames*, 169 U.S. 466 (1898).

1 recognized as a proper item to be included in the rate base on which a utility is entitled to
2 earn a return.

3 The rationale for the inclusion of working capital in rate base is to compensate
4 investors for the use of that amount of their funds over and above their investment in
5 plant. Working capital bridges the gap between the time funds are provided by investors
6 to provide service to customers and the time the revenue requirement is received from
7 those customers as reimbursement for that service.

8 **IV. SUMMARY OF OTHER WORKING CAPITAL CLAIM**

9 **Q. What are the components of the Company's working capital claim?**

10 A. PSE&G's working capital claim is comprised of cash (lead/lag), materials and
11 supplies, and prepayments. My testimony presents the cash (lead/lag) component of the
12 Company's working capital claim. The materials and supplies and prepayments element
13 of PSE&G's working capital claim are included in the Direct Testimony of Scott S.
14 Jennings. I calculated the cash component of the Company's working capital through
15 two Lead-Lag Studies and two Net Assets and Liabilities Analyses. A summary of
16 PSE&G's other working capital requirements are shown on Schedule HW-1.

17 As shown on Schedule HW-1, the amount of working capital required to finance
18 the recovery of the cost of service is \$362,888,000 for ELECTRIC and \$210,762,000 for
19 GAS. The amount of working capital required to finance the recovery of the cost of
20 service was developed through a Lead-Lag Study, which is summarized on Schedule
21 HW-2.

1 The amount of working capital required to finance the net difference between
2 certain current assets and particular current liabilities is \$61,187,000 for ELECTRIC and
3 \$41,382,000 for GAS, shown on Schedule HW-1. The amount of working capital
4 required to finance the net difference between certain current assets and particular current
5 liabilities was developed through a Net Assets and Liabilities Analysis, which is
6 summarized on Schedule HW-27.

7 In total, PSE&G's other cash working capital requirements are \$424,075,000 for
8 ELECTRIC and \$252,144,000 for GAS as shown on Schedule HW-1.

9 **V. EXPLAINING A LEAD-LAG STUDY**

10 **Q. What does a lead-lag study measure and how is it measured?**

11 A. The lead-lag studies in this testimony measures the level of funding required to
12 operate on a day-to-day basis in providing for the cost of service. This is measured by
13 calculating the net lag between the amount of time elapsed between when a company
14 provides a service to its customers and when the company receives payments from its
15 customers, and the amount of time elapsed between when a company receives goods and
16 services and when the company pays its suppliers for those goods and services. The
17 difference between these two elapsed periods of time is known as the "net lag."

18 The net lag is multiplied by the average daily cost of service or revenue
19 requirement to determine the cash working capital. Cash working capital is included in
20 rate base to compensate investors for the use of their funds over and above their

1 investment in plant, and to provide investors with a return on the funds required by a
2 company for daily operations.

3 **Q. What are the components of a lead-lag study?**

4 A. There are two primary elements of a lead-lag analysis, revenue lags and expense
5 leads. The revenue lag is the sum of three distinct components, the service period lag, the
6 billing lag, and the collection lag. The revenue lag is the elapsed time between the
7 delivery of a company's product to its customers and when a company receives payment
8 for the delivery of the product. Investor-provided funds are required to keep a company
9 running during the revenue lag time period, when the revenue stream is temporarily
10 insufficient to finance daily operational needs.

11 The expense lead is the sum of two distinct factors, the service lead and the
12 payment lead. The expense lead is the elapsed time between when a good or service is
13 provided to a company and when a company pays its supplier for the good or service.
14 During the expense lead time period, cash received from customers may temporarily
15 exceed a company's payments to its suppliers for goods or services, and the excess may
16 be used to repay investor-provided funds. The net difference between the revenue lag
17 and expense lead denotes a company's cash working capital requirement.

18 **Q. What time period does your lead-lag study encompass?**

19 A. The lead-lag studies in this case analyzed the revenues and the associated cost of
20 service during the 12 months ended December 31, 2016 to derive the appropriate lag
21 (lead) days. The appropriate lag (lead) days were then used to develop the forecasted 12-

1 months ended June 30, 2018 weighted revenue requirement and associated weighted cost
2 of service to calculate the Company's working capital claims.

3 **Q. Were the two lead-lag studies that you conducted for the Company prepared**
4 **using similar methods and techniques?**

5 A. Yes. In total, two lead-lag studies were prepared for PSE&G: one for ELECTRIC
6 and one for GAS. The two lead-lag studies were prepared using the same methods and
7 techniques. Other than differences in dollar weightings, the components of the revenue
8 lag days are the same for ELECTRIC and GAS since they have the same service and
9 billing period and share the same accounts receivable account.

10 Similarly, other than differences in dollar weightings between each expense lead
11 account, ELECTRIC's and GAS's expense lead days are generally identical since they
12 are processed from the same accounts payable system and were therefore analyzed
13 collectively. After adjustments, there were only two exceptions where expense lead
14 accounts are unique only to ELECTRIC or to GAS: Electric Supply Costs (ELECTRIC
15 only); and Gas Supply Costs (GAS only).

16 Since the methods, techniques, and revenue lag days are identical and expense
17 lead days are generally the same, I will discuss the results of the lead-lag study as being
18 for PSE&G unless the results merit differentiating between ELECTRIC and GAS.

19 **Q. What "adjustments" were made in the two lead-lag studies?**

20 A. Page 2 of Schedule HW-2 shows the adjustments made to PSE&G's forecasted
21 revenue requirement/cost of service used in the lead-lag study. I made two adjustments to
22 PSE&G's revenue requirement/cost of service used in the lead-lag studies consisting of:

1 (1) removing uncollectables from both revenues and expenses; and (2) adding New
2 Jersey energy sales taxes to both revenues and expenses.

3 I removed the uncollectables expense because the lag for uncollectible accounts is
4 part of the calculation of the collection lag as a result of the accounts receivable being
5 reduced when uncollectible accounts are expensed or written off. It should also be noted
6 that uncollectables were recommended to be removed from the lead-lag study by Rate
7 Counsel in the Company's last rate case.

8 I added New Jersey energy sales taxes because the Company pays them to the
9 State and must finance their billing, collection and payment even though they are not
10 considered part of the Company's revenue requirement/cost of service.

11 **Q. What data set did you utilize in your lead-lag studies?**

12 A. The lead-lag studies reflect information provided by the Company. Specifically,
13 Gannett Fleming requested representative data sets from PSE&G after developing an
14 understanding of the Company's collections, payment policies, procedures and expense
15 line items details. Once the requested raw data had been provided, data validation was
16 performed by comparing an actual invoice or a bill with data from the PSE&G's systems
17 to ensure accuracy.

18 The revenue lag data set was based on an accounts receivable analysis of the
19 beginning balance, the daily charges to this balance as bills were processed and mailed,
20 and the daily receipts for 366 days of the year during the 12 months ended December 31,
21 2016. The expense lead data set was based on information generated from the
22 Company's central accounts payable system. The expense lead data sets for the 12

1 months ended December 31, 2016 were analyzed to develop the service beginning and
2 ending dates, the amount purchased, and the date of payment.

3 Generally speaking, sampling was randomly done for the invoices within each
4 expense and tax category. In instances where there were large differences in the dollar
5 amount of the invoices in a single expense category, sampling was focused on the largest
6 invoices within the expense category. For example, the larger “Other O&M” expense
7 accounts were sampled instead of the smaller “Other O&M” expense accounts. The
8 samples analyzed averaged 91% of the Company’s total expense and tax dollars.² The
9 operating expenses and taxes sample sizes used in the lead-lag studies are shown on page
10 2 of Schedule HW-4.

11 **VI. RESULTS OF THE LEAD-LAG STUDY**

12 **Q. What are the results of the lead-lag studies?**

13 A. Schedule HW-2 is a two page Schedule which sets forth the results of the lead-lag
14 studies, page 1, and the adjustments made to the Company’s revenue requirement/cost of
15 service, page 2, used in the lead-lag studies. On page 1 of Schedule HW-2, the cash
16 working capital requirement for ELECTRIC is \$362,888,000 and the cash working
17 capital requirement for GAS is \$210,762,000.

² Sampling for the total expense and tax dollars paid totaled 91% and reflected a range of sampling from 15% to 100% of the total line item dollars (or expenses). The least amount of sampling, 15%, occurred for the sub- account line item “Workers’ Compensation.”

1 **Q. Please describe page 1 of Schedule HW-2.**

2 A. Page 1 of Schedule HW-2 calculates the net lag days and applies the result to the
3 average daily cost of service or revenue requirement. The cash working capital
4 requirements are based on the net difference between the dollar weighted revenue
5 requirement lag days and the dollar weighted cost of service lead days. The weighted lag
6 days for the receipt of the revenue requirement is developed at the top of the schedule,
7 with supporting detail shown in Schedule HW-3. The weighted lead days for the
8 payments of the cost of service is developed on Schedules HW-5 through HW-24 and the
9 schedule references for the weighted lead days for the cost of service line items are
10 shown on page 1 of HW-4.

11 For ELECTRIC, the working capital requirement shown on page 1 of Schedule
12 HW-2 was calculated by subtracting ELECTRIC's weighted lead days for the cost of
13 service of 20.4 days from the weighted average lag days for the revenue requirement of
14 57.7 days to determine the net lag days of 37.3. The 37.3 net lag days was multiplied by
15 the average adjusted daily cost of service or revenue requirement of \$9,729,000. The
16 result is a cash working capital requirement of \$362,888,000 for ELECTRIC.

17 Similarly, GAS's working capital requirement shown on page 1 of Schedule HW-
18 2 was calculated by subtracting GAS's weighted lead days for the cost of service of 15.2
19 days from the weighted average lag days for the revenue requirement of 57.7 days to
20 determine the net lag days of 42.5. The 42.5 net lag days was multiplied by the average
21 adjusted daily cost of service or revenue requirement of \$4,959,000. This process
22 determined a cash working capital requirement of \$210,762,000 for GAS.

1 **Q. Please explain the procedures used to determine the revenue requirement**
2 **lag.**

3 A. Schedule HW-3 of the exhibit summarizes the development of the 57.7 lag days
4 for the Company's revenue requirement. The lag days for revenue requirement are
5 comprised of: service period lag; billing lag; and collection lag. The lag days for
6 PSE&G's service period and the billing lag are developed on page 2 of Schedule HW-3
7 and the lag days for PSE&G's collection lag are developed on page 3 of Schedule HW-3.

8 **Q. Please explain the procedures used to determine the service period lag days**
9 **and billing lag days for the revenue requirement.**

10 A. The service period lag is the average time between actual meter readings of 30.5
11 days based on monthly billing. The average time between meter readings, 30.5 days, is
12 divided by two to produce a midpoint, or service period lag of 15.3 days.³ A mid-point
13 is used because it is assumed service is provided evenly over the service period.

14 The billing lag is the time from the meter reading date to the customer billing
15 date. The customer billing date, or the mailing date, is the day when the total billing
16 amount for a cycle is recorded to accounts receivable. The bills are prepared and mailed
17 3.4 days after meters are read and billings are recorded to accounts receivable.⁴ Adding
18 the service period lag to the billing lag produces a combined 18.7 day service period and
19 billing lag (15.3 days + 3.4 days = 18.7 days).

³ 15.3 = (The year 2016 had 366 days ÷ 12 bills per year = 30.5 service period ÷ 2 = 15.3 mid-point monthly service period.

⁴ 3.4 days is the weighted average of 4.2 days for third party supplied customers ("TPS") and 2.8 days for non-TPS customers.

1 **Q. Please describe the procedure used to calculate the collection lag portion of**
2 **the revenue lag.**

3 A. The collection lag is the average number of days from the date the bills posted to
4 accounts receivables to the date payments are received. This was determined by
5 summing the 366 daily accounts receivable balance during 2016 and dividing by the sum
6 of the 2016 daily receipts. This results in an average collection lag of 39.0 days for
7 PSE&G as shown on page 3 of HW-3.

8 **Q. Please summarize the total revenue lag.**

9 A. The total revenue lag of 57.7 lag days for PSE&G is shown on page 1 of Schedule
10 HW-3 and includes 18.7 day service period and billing lag and a collection lag of 39.0
11 days.

12 **Q. Please explain the revenue adjustment line item shown on page 1 of Schedule**
13 **HW-2.**

14 A. The revenue adjustment line item adds back the New Jersey energy sales tax that
15 the Company collects. The New Jersey energy sales tax is included as part of the revenue
16 requirement lag in both revenues and operating expenses. Customer are billed the Energy
17 Sales Tax, known as the Sales and Use Tax (SUT), by the Company and the Company
18 remits the charges to the State. The Company is required to remit these dollars to the
19 State in advance of their collection and the timing difference between the remittance to
20 the State and the collection from customers represents a working capital requirement.

1 **Q. Please explain the calculation of lead days for the cost of service expenses**
2 **shown on page 1 of Schedule HW-2.**

3 A. The lead days for ELECTRIC's and GAS's cost of service expenses shown on
4 page 1 of Schedule HW-2 are comprised of four major sub-accounts based upon the
5 Company's cost of service. The four major sub accounts include: operating expenses;
6 income taxes; taxes other than income taxes; and operating income.

7 For most cost of service expense items shown, the lead days were calculated for
8 each invoice or account based on the midpoints of the service periods to the dates the
9 Company paid the invoices or accounts based on varying levels of sampling of data.⁵
10 The exceptions were depreciation and amortization, deferred taxes and operating income
11 line items.

12 Page 1 of Schedule HW-4 lists the schedule references for the individual cost of
13 service lead days that were calculated for ELECTRIC and GAS. Sampling for the line
14 item cost of service expenses (or dollars) averaged 91% reflecting a range of sampling
15 from 15% to 100% of the total cost of service expenses line items (or dollars) being
16 sampled as shown on page 2 of Schedule HW-4.

17 **Q. How were the lag days determined for the operating expenses sub account**
18 **line items shown on page 1 of Schedule HW-2?**

19 A. For most of the operating expenses sub account line items shown, the lead days
20 were determined for each invoice or account sampled based on the midpoints of the
21 service periods to the dates the Company paid the invoices or accounts based on varying

⁵ As was the case with the revenue service period, a mid-point is used for the service lead because it is assumed service is provided evenly over the service period.

1 levels of sampling of data. The exceptions were the depreciation and amortization line
2 item, uncollectible accounts expense and regulatory expense.

3 For the operating expense sub-accounts line items shown on page 1 of Schedule
4 HW-2, the lead days were determined for each invoice or account sampled based on the
5 midpoints of the service periods to the dates the Company paid the invoices or accounts.
6 As explained previously, sampling was randomly done for the invoices within each
7 expense and tax category.

8 For example, the weighted average lead days for electric supply costs equal 35.3
9 days (see Schedule HW-5). The lead days for electric supply costs expense were
10 calculated for each invoice examined based on the midpoints of the service periods to the
11 dates the Company paid the invoices. In total, 93% of the electric supply costs expenses
12 were sampled. Similar analyses were conducted for gas supply costs (see Schedule HW-
13 6), salary and wages (see Schedule HW-7), pensions (see Schedule HW-8), medical
14 insurance (see Schedule HW-9), dental plan (see Schedule HW-10), group life insurance
15 (see Schedule HW-11), thrift & 401k plans (see Schedule HW-12), disability (see
16 Schedule HW-13), workers' compensation (see Schedule HW-14), service company
17 expense (see Schedule HW-15), and other O&M expenses (see Schedule HW-16).

18 Within the operating expense sub-accounts line items shown on page 1 of
19 Schedule HW-2 is the calculation of the weighted average lead days for pensions and
20 benefits reflecting the various benefit plans. ELECTRIC's weighted average lead days
21 for pensions and benefits is 10.2 lead days and GAS's weighted average lead days for

1 pensions and benefits is 13.7 lead days based on the midpoints of the service periods to
2 the dates the Company paid the invoices or accounts.

3 For the depreciation and amortization line item, a zero lead has been assigned
4 because accumulated depreciation, the contra account for the depreciation expense, has
5 been deducted from rate base. The accumulated depreciation account balance always
6 includes an uncollected amount of depreciation expense that is equal to the revenue
7 requirement lag days (i.e., 57.7 days). Assigning a zero lead recognizes that investor
8 funding occurred but it has not yet been recovered from customers.

9 In total, ELECTRIC's operating expenses sub account line items have a weighted
10 average of 30.4 lead days and GAS's operating expenses sub account line items have a
11 weighted average of 26.9 lead days as shown on page 1 of Schedule HW-2.

12 **Q. How were the lead days determined for Pensions and OPEB?**

13 A. Since part of pensions and OPEB are included in the Net Assets and Liabilities
14 Analyses, I considered how these expenses are booked and reflected in operating
15 expenses. That is, the lead days for pension expense do not include the cash
16 contributions to the trust because the cash contribution is included in the Net Assets and
17 Liabilities Analyses. The pension expense that is booked and reflected in operating
18 expenses has 14.3 lead days (see Schedule HW-8). If the pension expense lead days
19 included the cash contributions to the trust the lead days would be negative -68.3 lead
20 days, not 14.3 lead days.

21 The OPEB expense in the lead-lag study is calculated using a zero-day expense
22 lead, because the ratepayer is receiving a benefit from PSE&G's inclusion of the net

1 OPEB liability in the Net Assets and Liabilities analyses. The net OPEB liability reduces
2 the Company's cash working capital requirement. Therefore, utilizing a zero-expense
3 lead offsets the benefit to ratepayers to recognize the expense, which has increased the
4 OPEB liability and reduced rate base, has not been collected. This methodology is
5 consistent with the treatment of depreciation expense and the depreciation reserve.

6 Since consideration has been given to how pensions and OPEB expenses are
7 booked and reflected in operating expenses, there is no double counting of the cash
8 contribution included in the Net Assets and Liabilities Analyses.

9 **Q. How were the lead days determined for the income taxes sub account line**
10 **items shown on page 1 of Schedule HW-2?**

11 A. The lead days for the current federal taxes and current state taxes (CBT) sub-
12 account line items, shown on page 1 of Schedule HW-2, were calculated based on the
13 midpoint of the tax period to the payment date, weighted by the percent of the payment
14 required. The derivation of the current federal taxes 37.0 lead days is shown on Schedule
15 HW-17 and the derivation of the current state taxes (CBT) negative lead days of -44.8 is
16 shown on Schedule HW-18.

17 A zero lead has been assigned to deferred taxes because accumulated deferred
18 taxes have been deducted from rate base as a source of cost-free funds. The deferred
19 taxes account balance always includes an uncollected amount of deferred tax expense that
20 is equal to the revenue requirement lag days (i.e., 57.7 days). Therefore, the recorded
21 amount of accumulated deferred taxes deducted from rate base overstates the actual
22 amount of available cost-free capital by an amount equal to the revenue requirement lag

1 days. Assigning a zero lead recognizes that a portion of these cost-free funds have not
2 been recovered from customers.

3 In total, ELECTRIC's income taxes sub account line items have a weighted
4 average lead days of 6.2 and GAS's income taxes sub account line items have a weighted
5 average negative lead days of -18.3 as shown on page 1 of Schedule HW-2.

6 **Q. How were the lead days determined for the taxes other than income sub-**
7 **account sub account line items shown on page 1 of Schedule HW-2?**

8 A. The lead days for the taxes other than income taxes sub account line item shown
9 on page 1 of Schedule HW-2 were calculated based on the midpoint of the tax liability
10 period to the payment date, weighted by the actual amount paid. The taxes other than
11 income taxes sub-accounts are shown on Schedules HW-19 and are comprised of the tax
12 sub-accounts shown on Schedules HW-20 through HW-23. These taxes include real
13 estate tax (see Schedule HW-20), payroll taxes (see Schedule HW-21), New Jersey sales
14 and use tax (see Schedule HW-22) and Newark City Tax (see Schedule HW-23).

15 As shown on page 1 of Schedule HW-2, ELECTRIC's taxes other than income
16 taxes sub account line items have a weighted average 13.6 lead days and GAS's taxes
17 other than income taxes sub account line items have a weighted average 13.6 lead days.

18 **Q. How were the lead days determined for the New Jersey energy sales tax sub-**
19 **account sub account line items shown on page 1 of Schedule HW-2?**

20 A. The lead days for the New Jersey energy sales tax sub account line item shown on
21 page 1 of Schedule HW-2 were calculated based on the midpoint of the tax liability
22 period to the payment date, weighted by the actual amount paid. As shown on Schedule
23 HW-2, ELECTRIC's New Jersey energy sales tax sub account line has a weighted

1 average negative lead days of -54.0 and GAS's New Jersey energy sales tax sub account
2 line has a weighted average negative lead days of -54.0.

3 **Q. How were the lead days determined for the operating income sub-account**
4 **sub account line items shown on page 1 of Schedule HW-2?**

5 A. I assigned a zero lead day to utility operating income, or return on invested
6 capital, because operating income is the property of investors when it is earned.
7 Further, operating income is earned when service is provided. However, when service is
8 provided, the operating income is not collected simultaneously as is evidenced by the
9 existence of the revenue requirement lag days. This situation is remedied by assigning a
10 zero lead day to operating income in recognition that these earnings have not been
11 recovered from customers.⁶

12 **Q. Please summarize your results of the amount of working capital required to**
13 **finance the recovery of the cost of service based on the lead-lag studies shown**
14 **on page 1 of Schedule HW-2.**

15 A. As shown on page 1 of Schedule HW-2, ELECTRIC's working capital
16 requirement was calculated by subtracting ELECTRIC's weighted lead days for the cost
17 of service of 20.4 days from the weighted average lag days for the revenue requirement
18 of 57.7 days to determine the net lag days of 37.3. The 37.3 net lag days was multiplied
19 by the average adjusted daily cost of service or revenue requirement of \$9,729,000. The
20 result is a cash working capital requirement of \$362,888,000 for ELECTRIC.

21 Similarly for GAS, the working capital requirement shown on Schedule page 1 of
22 HW-2 was calculated by subtracting GAS's weighted lead days for the cost of service of

⁶ Smyth v. Ames, 169 U.S. 466 (1898)

1 15.2 days from the weighted average lag days for the revenue requirement of 57.7 days to
2 determine the net lag days of 42.5. The 42.5 net lag days was multiplied by the average
3 adjusted daily cost of service or revenue requirement of \$4,959,000. This process
4 determined a cash working capital requirement of \$210,762,000 for GAS.

5 **VII. NET ASSETS AND LIABILITIES ANALYSIS**

6 **Q. What does a net assets and liabilities analysis measure and how is it**
7 **measured?**

8 A. Under a net assets and liabilities analysis, certain liabilities are subtracted from
9 particular assets. This difference in the liabilities and the assets is assumed to be the cash
10 working capital. Under a net assets and liabilities analysis, the assets listed require
11 working capital whereas the liabilities listed are sources of working capital.

12 **VIII. RESULTS OF THE NET ASSETS AND LIABILITIES ANALYSIS**

13 **Q. What are the results of the net assets and liabilities analyses?**

14 A. PSE&G's cash working capital requirement determined through a net assets and
15 liabilities analysis is summarized on Schedule HW-27. As shown on Schedule HW-27,
16 the net assets and liabilities analysis determined cash working capital requirement of
17 \$61,187,000 for ELECTRIC and cash working capital requirement of \$41,382,000 for
18 GAS.

19 The amounts in the selected assets and liabilities accounts are shown on Schedule
20 HW-27. The listed assets are additional requirements for Working Capital and the
21 liabilities are sources. The amounts in these accounts were not considered when

1 analyzing leads and lags for operating expense, but have a direct relationship with the
2 electric and gas distribution rate base of PSE&G. The selected amounts included in
3 current assets are other accounts receivable, special deposits, other prepayments,
4 miscellaneous deferred debits and other post-retirement benefits. The prepayment of
5 Energy Sales Tax has been excluded from the net asset liability analysis as it is included
6 in the Lead-Lag study as described above. Miscellaneous other accounts receivable are
7 predominantly damage claims related to electric pole repairs, and other receivables such
8 as billings for reimbursable repair work. Such expenditures are required to be made in
9 the day-to-day operation of the utility, but are not charged to utility operations and
10 therefore, were not included in the lead-lag measurements. These expenditures are
11 eventually reimbursed by the State or other agencies. However, there is a continuing
12 Working Capital investment required for such expenditures until reimbursement is
13 received.

14 Post-retirement benefits represent the asset/liability associated with the expense
15 recognition of SFAS 106 and the associated recovery of costs from customers. Energy
16 Sales Tax and prepayments to the State of New Jersey for annual sales tax liability have
17 been excluded from this analysis as they are included in the lead-lag study. The only
18 prepayment included in this analysis is credit facilities fees. Special deposits represent
19 the Company assets created as a result of the cumulative effect of annual pension funding
20 in excess of SFAS No. 87 (pension accounting) expense and the funding of non-qualified
21 pension costs.

1 The liability section of Schedule HW-27 includes the recognition of OPEB
2 benefits, as previously discussed.

3 The majority of the accounts payable amount shown reflects the recording of
4 payables for contractors and other material and supply (M&S) inventories. Since the
5 other M&S balance is included as a separate component of Working Capital, it is
6 necessary to reduce Working Capital requirements by the amounts included in other
7 M&S inventory, which have not yet been paid.

8 PSE&G's cash working capital requirement determined through the net assets and
9 liabilities analysis, shown on Schedule HW-27, is \$61,187,000 for ELECTRIC and the
10 cash working capital requirement is \$41,382,000 for GAS.

11 **Q. Does this conclude your direct testimony?**

12 **A. Yes, it does.**

APPENDIX A

Professional Qualifications
of
Harold Walker, III
Manager, Financial Studies
Gannett Fleming Valuation and Rate Consultants, LLC.

EDUCATION

Mr. Walker graduated from Pennsylvania State University in 1984 with a Bachelor of Science Degree in Finance. His studies concentrated on securities analysis and portfolio management with an emphasis on economics and quantitative business analysis. He has also completed the regulation and the rate-making process courses presented by the College of Business Administration and Economics Center for Public Utilities at New Mexico State University. Additionally, he has attended programs presented by The Institute of Chartered Financial Analysts (CFA).

Mr. Walker was awarded the professional designation "Certified Rate of Return Analyst" (CRRA) by the Society of Utility and Regulatory Financial Analysts. This designation is based upon education, experience and the successful completion of a comprehensive examination. He is also a member of the Society of Utility and Regulatory Financial Analysts (SURFA) and has attended numerous financial forums sponsored by the Society. The SURFA forums are recognized by the Association for Investment Management and Research (AIMR) and the National Association of State Boards of Accountancy for continuing education credits.

Mr. Walker is also a licensed Municipal Advisor Representative (Series 50) by Municipal Securities Rulemaking Board (MSRB) and Financial Industry Regulatory Authority (FINRA).

BUSINESS EXPERIENCE

Prior to joining Gannett Fleming Valuation and Rate Consultants, LLC., Mr. Walker was employed by AUS Consultants - Utility Services. He held various positions during his eleven years with AUS, concluding his employment there as a Vice President. His duties included providing and supervising financial and economic studies on behalf of investor owned and municipally owned water, waste water, electric, natural gas distribution and transmission, oil pipeline and telephone utilities as well as resource recovery companies.

In 1996, Mr. Walker joined Gannett Fleming Valuation and Rate Consultants, LLC. In his capacity as Manager, Financial Studies and for the past twenty years, he has continuously studied rates of return requirements for regulated firms. In this regard, he supervised the preparation of rate of return studies in connection with his testimony and in the past, for other individuals. He also assisted and/or developed dividend policy studies, nuclear prudence studies, calculated fixed charge rates for avoided costs involving cogeneration projects, financial decision studies for capital budgeting purposes and developed financial models for determining future capital requirements and the effect of those requirements on investors and ratepayers, valued utility

APPENDIX A

property and common stock for acquisition and divestiture, and assisted in the private placement of fixed capital securities for public utilities.

Head, Gannett Fleming GASB 34 Task Force responsible for developing Governmental Accounting Standards Board (GASB) 34 services, and educating Gannett Fleming personnel and Gannett Fleming clients on GASB 34 and how it may affect them. The GASB 34 related services include inventory of assets, valuation of assets, salvage estimation, annual depreciation rate determination, estimation of depreciation reserve, asset service life determination, asset condition assessment, condition assessment documentation, maintenance estimate for asset preservation, establishment of condition level index, geographic information system (GIS) and data management services, management discussion and analysis (MD&A) reporting, required supplemental information (RSI) reporting, auditor interface, and GASB 34 compliance review.

Mr. Walker was also the Publisher of C.A. Turner Utility Reports from 1988 to 1996. C.A. Turner Utility Reports is a financial publication which provides financial data and related ratios and forecasts covering the utility industry. From 1993 to 1994, he became a contributing author for the Fortnightly, a utility trade journal. His column was the Financial News column and focused mainly on the natural gas industry.

In 2004, Mr. Walker was elected to serve on the Board of Directors of SURFA. Previously, he served as an ex officio directors as an advisor to SURFA's existing President. In 2000, Mr. Walker was elected President of SURFA for the 2001-2002 term. Prior to that, he was elected to serve on the Board of Directors of SURFA during the period 1997-1998 and 1999-2000. Currently, he also serves on the Pennsylvania Municipal Authorities Association, Electric Deregulation Committee.

EXPERT TESTIMONY

Mr. Walker has submitted testimony or been deposed on various topics before regulatory commissions and courts in twenty states including: Arizona, California, Colorado, Connecticut, Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, Missouri, New Hampshire, New Jersey, New York, North Carolina, Oklahoma, Pennsylvania, Vermont, Virginia, and West Virginia. His testimonies covered various subjects including: appropriate capital structure and fixed capital cost rates, depreciation, fair market value, fair rate of return, purchased water adjustments, synchronization of interest charges for income tax purposes, valuation, cash working capital, lead-lag studies, financial analyses of investment alternatives, and fair value. The following tabulation provides a listing of the electric power, natural gas distribution, telephone, wastewater, and water service utility cases in which he has been involved as a witness. Additionally, he has been involved in a number of rate proceedings involving small public utilities which were resolved by Option Orders and therefore, are not listed below.

APPENDIX A

<u>Client</u>	<u>Docket No.</u>
Alpena Power Company	U-10020
Armstrong Telephone Company - Northern Division	92-0884-T-42T
Armstrong Telephone Company - Northern Division	95-0571-T-42T
Artesian Water Company, Inc.	90 10
Artesian Water Company, Inc.	06 158
Aqua Illinois Consolidated Water Divisions and Consolidated Sewer Divisions	11-0436
Aqua Illinois Hawthorn Woods Wastewater Division	07 0620/07 0621/08 0067
Aqua Illinois Hawthorn Woods Water Division	07 0620/07 0621/08 0067
Aqua Illinois Kankakee Water Division	10-0194
Aqua Illinois Kankakee Water Division	14-0419
Aqua Illinois Vermilion Division	07 0620/07 0621/08 0067
Aqua Illinois Willowbrook Wastewater Division	07 0620/07 0621/08 0067
Aqua Illinois Willowbrook Water Division	07 0620/07 0621/08 0067
Aqua Pennsylvania Wastewater Inc	A-2016-2580061
Aqua Virginia - Alpha Water Corporation	Pue-2009-00059
Aqua Virginia - Blue Ridge Utility Company, Inc.	Pue-2009-00059
Aqua Virginia - Caroline Utilities, Inc. (Wastewater)	Pue-2009-00059
Aqua Virginia - Caroline Utilities, Inc. (Water)	Pue-2009-00059
Aqua Virginia - Earlysville Forest Water Company	Pue-2009-00059
Aqua Virginia - Heritage Homes of Virginia	Pue-2009-00059
Aqua Virginia - Indian River Water Company	Pue-2009-00059
Aqua Virginia - James River Service Corp.	Pue-2009-00059
Aqua Virginia - Lake Holiday Utilities, Inc. (Wastewater)	Pue-2009-00059
Aqua Virginia - Lake Holiday Utilities, Inc. (Water)	Pue-2009-00059
Aqua Virginia - Lake Monticello Services Co. (Wastewater)	Pue-2009-00059
Aqua Virginia - Lake Monticello Services Co.	Pue-2009-00059

APPENDIX A

(Water)

Aqua Virginia - Lake Shawnee	Pue-2009-00059
Aqua Virginia - Land'or Utility Company (Wastewater)	Pue-2009-00059
Aqua Virginia - Land'or Utility Company (Water)	Pue-2009-00059
Aqua Virginia - Mountainview Water Company, Inc.	Pue-2009-00059
Aqua Virginia - Powhatan Water Works, Inc.	Pue-2009-00059
Aqua Virginia - Rainbow Forest Water Corporation	Pue-2009-00059
Aqua Virginia - Shawnee Land	Pue-2009-00059
Aqua Virginia - Sydnor Water Corporation	Pue-2009-00059
Aqua Virginia - Water Distributors, Inc.	Pue-2009-00059
Borough of Hanover	R-2009-2106908
Borough of Hanover	R-2012-2311725
Borough of Hanover	R-2014-242830
Chaparral City Water Company	W 02113a 04 0616
California-American Water Company	CIVCV156413
Connecticut-American Water Company	99-08-32
Connecticut Water Company	06 07 08
Citizens Utilities Company Colorado Gas Division	-
Citizens Utilities Company Vermont Electric Division	5426
Citizens Utilities Home Water Company	R 901664
Citizens Utilities Water Company of Pennsylvania	R 901663
City of Bethlehem - Bureau of Water	R-00984375
City of Bethlehem - Bureau of Water	R 00072492
City of Bethlehem - Bureau of Water	R-2013-2390244
City of Dubois – Bureau of Water	R-2013-2350509
City of Dubois – Bureau of Water	R-2016-2554150
City of Lancaster Sewer Fund	R-00005109
City of Lancaster Sewer Fund	R-00049862
City of Lancaster Sewer Fund	R-2012-2310366
City of Lancaster Water Fund	R-00984567
City of Lancaster Water Fund	R-00016114
City of Lancaster Water Fund	R 00051167
City of Lancaster Water Fund	R-2010-2179103
City of Lancaster Water Fund	R-2014-2418872
Consumers Pennsylvania Water Company	

APPENDIX A

Roaring Creek Division	R-00973869
Consumers Pennsylvania Water Company	
Shenango Valley Division	R-00973972
Country Knolls Water Works, Inc.	90 W 0458
East Resources, Inc. - West Virginia Utility	06 0445 G 42T
Elizabethtown Water Company	WR06030257
Hampton Water Works Company	DW 99-057
Illinois American Water Company	16-0093
Indian Rock Water Company	R-911971
Indiana Natural Gas Corporation	38891
Jamaica Water Supply Company	-
Kentucky American Water Company, Inc.	2007 00134
Middlesex Water Company	WR 89030266J
Missouri-American Water Company	WR 2000-281
Missouri-American Water Company	SR 2000-282
Mount Holly Water Company	WR06030257
New Jersey American Water Company	WR 89080702J
New Jersey American Water Company	WR 90090950J
New Jersey American Water Company	WR 03070511
New Jersey American Water Company	WR-06030257
New Jersey American Water Company	WR08010020
New Jersey American Water Company	WR10040260
New Jersey American Water Company	WR11070460
New Jersey American Water Company	WR15010035
Newtown Artesian Water Company	R-911977
Newtown Artesian Water Company	R-00943157
Newtown Artesian Water Company	R-2009-2117550
Newtown Artesian Water Company	R-2011-2230259
North Maine Utilities	14-0396
Northern Indiana Fuel & Light Company	38770
Oklahoma Natural Gas Company	PUD-940000477
Pennichuck Water Works, Inc.	DW 04 048
Pennichuck Water Works, Inc.	DW 06 073
Pennichuck Water Works, Inc.	DW 08 073
Pennsylvania Gas & Water Company (Gas)	R-891261
Pennsylvania Gas & Water Co. (Water)	R 901726
Pennsylvania Gas & Water Co. (Water)	R-911966
Pennsylvania Gas & Water Co. (Water)	R-22404
Pennsylvania Gas & Water Co. (Water)	R-00922482

APPENDIX A

Pennsylvania Gas & Water Co. (Water)	R-00932667
Public Service Company of North Carolina, Inc.	G-5, Sub 565
Presque Isle Harbor Water Company	U-9702
St. Louis County Water Company	WR-2000-844
Town of North East Water Fund	9190
United Water New Rochelle	W-95-W-1168
United Water Toms River	WR-95050219
Valley Water Systems, Inc.	06 10 07
West Virginia-American Water Company	15-0676-W-42T
West Virginia-American Water Company	15-0675-S-42T
Wilmington Suburban Water Corporation	94-149
York Water Company	R-901813
York Water Company	R-922168
York Water Company	R-943053
York Water Company	R-963619
York Water Company	R-994605
York Water Company	R-00016236

TECHNICAL PUBLICATIONS

Walker, Harold. "Valuation and Inventory of Governmental Assets Under GASB 34." Presented at the Society of Depreciation Professionals 21st Annual Conference, September 2007.

Walker, Harold. "The Paradox of State Regulatory Opinions and Investor Behavior." Presented at the National Association of Water Companies New England Chapter conference, November 2006.

Walker, Harold. "Valuation and Inventory Under GASB 34." Presented at the Government Finance Officers Association South Central Pennsylvania Regional Chapter conference, August 2003.

Walker, Harold. "Issues in Ethics." Moderator, presented at the Society of Utility & Regulatory Financial Analysts 35th Financial Forum, April 2003.

Walker, Harold. "What's on Tap in the Water Industry." Moderator, presented at the Society of Utility & Regulatory Financial Analysts 34th Financial Forum, April 2002.

Walker, Harold. "Methodology Debate: Disaggregating Risks of Generation, Transmission, and Distribution Assets." Moderator, presented at the Society of Utility & Regulatory Financial Analysts 34th Financial Forum, April 2002.

Walker, Harold. "Energy, Water & Communication - Essential Services for a Secure Homeland." Chairperson, presented at the Society of Utility & Regulatory Financial Analysts 34th Financial Forum, April 2002.

APPENDIX A

Walker, Harold. "Valuation and Inventory under GASB 34." Presented at the Government Finance Officers Association Southeastern Pennsylvania Regional Chapter conference, April 2002.

Walker, Harold. "GASB 34 & Your Infrastructure." *The Authority*, August 2001, Volume XXXII, No. 4, pages 10-13.

Walker, Harold. "Managing Risk." Conference Chairperson, presented at the Society of Utility & Regulatory Financial Analysts 33rd Financial Forum, April 2001.

Walker, Harold. "Paying for Your MSW System - Waste Generation Fees." Presented at the Federation of New York Solid Waste Association Solid Waste/Recycling Conference and Trade Show, May 2001.

Walker, Harold. "Statement No. 34 of the Government Accounting Standards Board." Presented at the Pennsylvania Association of Township Supervisors 79th Annual State Convention, April 2001.

Walker, Harold. "Cost of Capital Issues." Presented at the National Association of Water Companies New England Chapter conference, October 2000.

Walker, Harold, Timothy Hartman, and Mark Everett. "Waste Generation Study: Life After Flow Control." Presented at Waste Con 2000, October 1999.

Walker, Harold, and Timothy Hartman. "The Enhancement of Revenues Through a Waste Generation Study." Presented at SWANA's Planning and Management Symposium, July 1999.

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
NEWARK, NEW JERSEY

TO ACCOMPANY THE
DIRECT TESTIMONY

SUPPORTING SCHEDULES

SCHEDULES HW-1 TO HW-27

FOR
LEAD-LAG STUDY
AND NET ASSETS AND LIABILITIES ANALYSIS
FOR DETERMINATION OF OTHER CASH WORKING CAPITAL

JANUARY 2018

Prepared by:
GANNETT FLEMING
VALUATION AND RATE CONSULTANTS, LLC



Valley Forge, Pennsylvania

PUBLIC SERVICE ELECTRIC AND GAS COMPANY

CALCULATION OF OTHER CASH WORKING CAPITAL REQUIREMENTS
BASED ON A LEAD-LAG STUDY AND NET ASSETS AND LIABILITY ANALYSIS
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2016

INDEX TO SCHEDULES

<u>Schedules</u>	<u>Schedule Subject</u>
Schedule HW-1	Summary of Other Cash Working Capital
Schedule HW-2, Page 1	Summary of Lead Lag Study Determined Cash Working Capital
Schedule HW-2, Page 2	Summary of Test Year Adjustments For Lead Lag Study
Schedule HW-3, Page 1	Summary of Total Revenue Lag Days
Schedule HW-3, Page 2	Service Period and Billing Lag Days
Schedule HW-3, Page 3	Calculation of Collection Lag Days
Schedule HW-4, Page 1	Summary of Operating Expenses and Taxes Lead Days
Schedule HW-4, Page 2	Summary of Operating Expenses & Taxes Sample Sizes
Schedule HW-5	Electric Supply Costs Lead Days
Schedule HW-6	Gas Supply Costs Lead Days
Schedule HW-7	Salary And Wages Lead Days
Schedule HW-8	Pensions Lead Days
Schedule HW-9	Medical Insurance Lead Days
Schedule HW-10	Dental Plan Lead Days
Schedule HW-11	Group Life Insurance Lead Days
Schedule HW-12	Thrift & 401K Plans Lead Days
Schedule HW-13	Disability Lead Days
Schedule HW-14	Workers' Compensation Lead Days
Schedule HW-15	Service Company Expense Lead Days
Schedule HW-16	Other O&M Expenses Lead Days
Schedule HW-17	Current Federal Taxes Lead Days
Schedule HW-18	Current State (CBT) Lead Days
Schedule HW-19	Taxes Other Than Income Tax Lead Days
Schedule HW-20	Real Estate Tax Lead Days
Schedule HW-21	Payroll Taxes Lead Days
Schedule HW-22	New Jersey Sales And Use Tax Lead Days
Schedule HW-23	Newark City Tax Lead Days
Schedule HW-24	New Jersey Energy Sales Tax Lead Days
Schedule HW-25	Pension Cash Lead Days
Schedule HW-26	OPEB Cash Lead Days
Schedule HW-27	Summary of Net Assets and Liabilities

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
SUMMARY OF OTHER CASH WORKING CAPITAL
FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2016

(THOUSANDS)

Method (1)	Electric (2)	Gas (3)	Total (4)
1. Amount Required to Recover Cost of Service	\$362,888	\$210,762	\$573,650
2. Net Assets and Liabilities	61,187	41,382	102,569
3. Total Other Cash Working Capital	\$424,075	\$252,144	\$676,219

PUBLIC SERVICE ELECTRIC AND GAS COMPANY

**SUMMARY OF NET CASH WORKING CAPITAL
REQUIRED FOR COST OF SERVICE
FOR THE TWELVE MONTHS ENDING DECEMBER 31, 2016**

(THOUSANDS)

	Electric			Gas		
	Adjusted Test Year Amount	Lag Days	Weighted Amount	Adjusted Test Year Amount	Lag Days	Weighted Amount
Revenue Requirement	\$3,302,693	57.7	\$190,565,363	\$1,696,759	57.7	\$97,903,003
New Jersey Energy Sales Tax	248,356	57.7	14,330,141	\$113,313	57.7	6,538,162
Total Revenue Requirement	3,551,049	57.7	204,895,504	1,810,072	57.7	104,441,165
Requirements:						
Electric Supply Costs	\$1,883,337	35.3	66,481,801	\$0	0.0	\$0
Gas Supply Costs	0	0.0	0	767,761	34.7	26,641,303
Salary and Wages	145,962	14.1	2,058,068	181,035	14.1	2,552,587
Pension and Benefits:						
Pensions	6,006	14.3	85,893	7,244	14.3	103,595
OPEB	16,678	0.0	0	6,722	0.0	0
Medical Insurance	13,844	15.5	214,588	16,789	15.5	260,228
Dental Insurance	695	2.2	1,528	844	2.2	1,857
Group Life Insurance	334	10.5	3,504	407	10.5	4,268
Thrift & 401K Plans	4,136	8.6	35,572	5,033	8.6	43,283
Disability	134	35.7	4,800	163	35.7	5,825
Workers' Compensation	1,344	70.0	94,072	1,640	70.0	114,812
Total Pension and Benefits	43,172	10.2	439,956	38,842	13.7	533,868
Uncollectibles	0	0.0	0	0	0.0	0
Service Company Expense	103,789	38.1	3,954,373	90,048	38.1	3,430,814
Other O&M Expenses	344,380	34.2	11,777,795	65,653	34.2	2,245,338
Depreciation & Amortization	264,040	0.0	0	175,220	0.0	0
Subtotal Operating Expenses	2,784,681	30.4	84,711,994	1,318,558	26.9	35,403,910
Income Taxes:						
Current Federal Taxes	27,243	37.0	1,007,977	(72,431)	37.0	(2,679,961)
Current State (CBT)	1,295	(44.8)	(57,964)	(13,371)	(44.8)	598,348
Deferred Taxes	124,657	0.0	0	199,279	0.0	0
Subtotal Income Taxes	153,194	6.2	950,013	113,477	(18.3)	(2,081,613)
Taxes Other than Income Tax	23,871	13.6	324,651	18,746	13.6	254,941
New Jersey Energy Sales Tax	248,356	(54.0)	(13,411,223)	113,313	(54.0)	(6,118,904)
Operating Income	340,946	0.0	0	245,978	0.0	0
Total Cost of Service Requirement	3,551,049	20.4	72,575,434	1,810,072	15.2	27,458,334
Average Daily Cost of Service Requirement	9,729			4,959		
Net Lag Days		37.3			42.5	
Cash Working Capital Requirement			\$362,888			\$210,762

PUBLIC SERVICE ELECTRIC AND GAS COMPANY

**SUMMARY OF TEST YEAR ADJUSTMENTS
REQUIRED FOR COST OF SERVICE LEAD LAG STUDY
FOR THE TWELVE MONTHS ENDING DECEMBER 31, 2016**

(THOUSANDS)

	Electric			Gas		
	Test Year Amount	Adjustments	Adjusted Test Year Amount	Test Year Amount	Adjustments	Adjusted Test Year Amount
Revenue Requirement	\$3,354,766	(\$52,073)	\$3,302,693	\$1,725,435	(\$28,676)	\$1,696,759
New Jersey Energy Sales Tax	0	248,356	248,356	\$0	\$113,313	\$113,313
Total Revenue Requirement	<u>3,354,766</u>	<u>196,283</u>	<u>3,551,049</u>	<u>1,725,435</u>	<u>84,637</u>	<u>1,810,072</u>
Requirements:						
Electric Supply Costs	\$1,883,337	\$0	\$1,883,337	\$0	\$0	\$0
Gas Supply Costs	0	0	0	767,761	0	767,761
Salary and Wages	145,962	0	145,962	181,035	0	181,035
Pension and Benefits:						
Pensions	6,006	0	6,006	7,244	0	7,244
OPEB	16,678	0	16,678	6,722	0	6,722
Medical Insurance	13,844	0	13,844	16,789	0	16,789
Dental Insurance	695	0	695	844	0	844
Group Life Insurance	334	0	334	407	0	407
Thrift & 401K Plans	4,136	0	4,136	5,033	0	5,033
Disability	134	0	134	163	0	163
Workers' Compensation	1,344	0	1,344	1,640	0	1,640
Total Pension and Benefits	<u>43,172</u>	<u>0</u>	<u>43,172</u>	<u>38,842</u>	<u>0</u>	<u>38,842</u>
Uncollectibles	52,073	(52,073)	0	28,676	(28,676)	0
Service Company Expense	103,789	0	103,789	90,048	0	90,048
Other O&M Expenses	344,380	0	344,380	65,653	0	65,653
Depreciation & Amortization	264,040	0	264,040	175,220	0	175,220
Subtotal Operating Expenses	<u>2,836,754</u>	<u>(52,073)</u>	<u>2,784,681</u>	<u>1,347,234</u>	<u>(28,676)</u>	<u>1,318,558</u>
Income Taxes:						
Current Federal Taxes	27,243	0	27,243	(72,431)	0	(72,431)
Current State (CBT)	1,295	0	1,295	(13,371)	0	(13,371)
Deferred Taxes	124,657	0	124,657	199,279	0	199,279
Subtotal Income Taxes	<u>153,194</u>	<u>0</u>	<u>153,194</u>	<u>113,477</u>	<u>0</u>	<u>113,477</u>
Taxes Other than Income Tax	23,871	0	23,871	18,746	0	18,746
New Jersey Energy Sales Tax	0	248,356	248,356	0	113,313	113,313
Operating Income	<u>340,946</u>	<u>0</u>	<u>340,946</u>	<u>245,978</u>	<u>0</u>	<u>245,978</u>
Total Cost of Service Requirement	<u>3,354,766</u>	<u>196,283</u>	<u>3,551,049</u>	<u>1,725,435</u>	<u>84,637</u>	<u>1,810,072</u>

PUBLIC SERVICE ELECTRIC AND GAS COMPANY

CALCULATION OF REVENUE REQUIREMENT LAG
BASED ON LEAD-LAG STUDY FOR THE TWELVE MONTHS ENDING DECEMBER 31, 2016

Description (1)	Amount (2)	Weighted Amount (3)	(Lead)/ Lag Days (4)=(3)/(2)
<u>Operating Revenues - Electric & Gas:</u>			
Service Period & Billing Lag: (From mid-point of service period to mailing date. See page 2 of this Schedule)	\$5,226,741,008	\$97,740,056,857	18.7
Collection Lag: (Sum of daily accounts receivable balance divided by the sum of daily receipts. See page 3 of this Schedule)	5,184,502,363	202,432,275,534	<u>39.0</u>
Total Revenue Lag Days			<u><u>57.7</u></u>

PUBLIC SERVICE ELECTRIC AND GAS COMPANY

CALCULATION OF SERVICE PERIOD AND BILLING LAG

	<u>Weighted Days</u>
	(1)
Estimated Mid-point Of Service Period Based On Monthly Billing	
Days In The Year	366
Divided By The Number Of Bills In The Year	<u>12</u>
Average Number Of Days Covered In A Bill	30.5
Divided By	<u>2</u>
Estimated Mid-point of Service Period Based On Monthly Billing	15.3
Average Billing Lag of the A/R Post Date From Meter Read	<u>3.4</u>
Total Service Period & Billing Lag	<u><u>18.7</u></u>

PUBLIC SERVICE ELECTRIC AND GAS COMPANY

CALCULATION OF COLLECTION LAG

	<u>Amount</u>
	(1)
Sum of Sampled Daily Accounts Receivable Balance in 2016	\$138,273,412,354
Divided By Number of Days of Daily Accounts Receivable Sampled	<u>250</u>
Average Sampled Daily Accounts Receivable Balance in 2016	553,093,649
Multiplied By Days in the 2016 Year	<u>366</u>
Sum of Daily Accounts Receivable Balance in a Year	<u><u>\$202,432,275,534</u></u>
PSE&G Accounts Receivable on 12/31/15	\$677,842,845
Minus PSE&G Accounts Receivable on 12/31/16	<u>720,081,489</u>
Change in Accounts Receivables for 2016	<u><u>(\$42,238,645)</u></u>
The Sum of Daily Revenue For 2016	\$5,226,741,008
Plus Change in Accounts Receivables for 2016	<u>(42,238,645)</u>
The Sum of Daily Receipts in 2016	<u><u>\$5,184,502,363</u></u>
Sum of Daily Accounts Receivable Balance in a Year	\$202,432,275,534
Divided By The Sum of Daily Receipts in a Year	<u>5,184,502,363</u>
Total Service Period Collection Lag	<u><u>39.0</u></u>

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
SUMMARY OF OPERATING EXPENSES AND TAXES LEAD DAYS
BASED ON A LEAD-LAG STUDY FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2016

Description (1)	Schedule Reference (2)	Amount (3)	Weighted Amount (4)	(Lead)/ Lag Days (5)=(4)/(3)
<u>Operating Expenses & Taxes</u>				
Electric Supply Costs	Schedule HW-5	\$2,227,674,378	\$78,672,443,931	35.3
Gas Supply Costs	Schedule HW-6	659,856,711	22,908,642,187	34.7
Salary and Wages	Schedule HW-7	832,289,576	11,717,084,348	14.1
Pensions *	Schedule HW-8	*	*	14.3 *
Medical Insurance	Schedule HW-9	396,909,041	6,156,494,218	15.5
Dental Plan	Schedule HW-10	11,708,339	26,275,826	2.2
Group Life Insurance	Schedule HW-11	8,415,048	88,318,555	10.5
Thrift & 401K Plans	Schedule HW-12	40,887,264	351,153,159	8.6
Disability	Schedule HW-13	2,446,660	87,240,599	35.7
Workers' Compensation	Schedule HW-14	565,277	39,595,529	70.0
Service Company Expense	Schedule HW-15	634,771,409	24,203,167,050	38.1
Other O&M Expenses	Schedule HW-16	980,283,216	33,502,047,351	34.2
Depreciation & Amortization **	**	-	-	0.0 **
Current Federal Taxes	Schedule HW-17	*	*	37.0 *
Current State (CBT)	Schedule HW-18	*	*	(44.8) *
Deferred Taxes **	**	-	-	0.0 **
Taxes Other than Income Tax	Schedule HW-19	94,823,289	1,289,658,736	13.6
Real Estate Tax	Schedule HW-20	18,052,824	(415,003,308)	(23.0)
Payroll Taxes	Schedule HW-21	58,162,840	1,036,637,518	17.8
New Jersey Sales and Use Tax	Schedule HW-22	17,970,966	624,602,215	34.8
Newark City Tax	Schedule HW-23	636,659	43,422,311	68.2
New Jersey Energy Sales Tax	Schedule HW-24	357,696,614	(19,308,658,342)	(54.0)
Operating Income **	**	-	-	0.0 **

* Lead days are calculated on percentages.

** Lead days are assumed to be 0.

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
OPERATING EXPENSES & TAXES SAMPLE SIZES USED IN THE
LEAD-LAG STUDY FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2016

Description (1)	Per Books (2)	Sample Size (3)	Percentage Sampled (4)=(3)/(2)
<u>Operating Expenses & Taxes</u>			
1. Electric Supply Costs	\$1,883,337,143	\$2,227,674,378	118%
2. Gas Supply Costs	767,760,892	659,856,711	86%
3. Salary and Wages	326,996,840	832,289,576	255% (1)
4. Pensions	13,250,909	13,250,909	100% (2)
5. Medical Insurance	30,633,278	396,909,041	1296% (3)
6. Dental Plan	1,538,877	11,708,339	761% (3)
7. Group Life Insurance	740,193	740,193	100%
8. Thrift & 401K Plans	9,169,233	40,887,264	446% (3)
9. Disability	297,608	2,446,660	822% (3)
10. Workers' Compensation	2,984,059	565,277	19%
11. Service Company Expense	634,771,409	634,771,409	100%
12. Other O&M Expenses	410,033,119.00	980,283,216	239% (4)
13. Current Federal Taxes	(45,188,780)	(45,188,780)	100% (2)
14. Current State (CBT)	(12,075,624)	(12,075,624)	100% (2)
15. Taxes Other than Income Tax	42,617,028	94,823,289	223% (5)
16. New Jersey Energy Sales Tax	357,696,614	357,696,614	100%
	<u>\$4,424,562,798</u>	<u>\$4,314,239,835 (6)</u>	<u>98%</u>

- Notes: (1) Sample amount is greater than 100% of expense because sampling based on gross payroll dollars and also includes capitalized amounts.
(2) Sampling based on percentage of payments.
(3) Sample amount is greater than 100% of expense because it includes employee contributions as well as what is charged outside O&M.
(4) Sample amount is greater than 100% of expense because sampling included all O&M expenses.
(5) Sample amount is greater than 100% of expense because it includes employee paid payroll taxes as well as what is charged outside O&M.
(6) Sample total was adjusted so no sample size was greater than their respective per book amount.

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
CALCULATION OF LAG DAYS FOR ELECTRIC SUPPLY COSTS
BASED ON LEAD/LAG STUDY FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2016

Month of Payment	(Lead)/ Lag Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-16	35.0	\$164,487,483.02	\$5,757,061,905.70
February-16	37.0	189,849,347.14	7,024,425,844.18
March-16	35.0	171,211,142.89	5,992,390,001.15
April-16	35.0	157,504,498.19	5,512,657,436.65
May-16	34.5	147,727,610.50	5,096,602,562.25
June-16	35.0	163,886,643.02	5,736,032,505.70
July-16	34.5	198,013,192.38	6,831,455,137.23
August-16	37.0	260,671,526.48	9,644,846,479.69
September-16	35.0	269,510,323.21	9,432,861,312.35
October-16	34.5	196,248,723.61	6,770,580,964.55
November-16	36.0	152,050,442.81	5,473,815,941.16
December-16	34.5	156,513,444.64	5,399,713,840.08
Total Electric Supply Costs	35.3	\$2,227,674,377.89	\$78,672,443,930.69

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
CALCULATION OF LAG DAYS FOR GAS SUPPLY COSTS
BASED ON LEAD/LAG STUDY FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2016

Month of Payment	(Lead)/ Lag Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-16	35.0	\$76,607,828.71	\$2,681,274,004.93
February-16	34.0	144,640,696.38	4,917,783,677.02
March-16	35.0	125,463,823.81	4,391,233,833.19
April-16	35.0	76,044,203.04	2,661,547,106.24
May-16	34.5	50,207,755.12	1,732,167,551.69
June-16	35.0	30,787,638.58	1,077,567,350.35
July-16	34.5	16,873,682.10	582,142,032.56
August-16	34.0	10,757,969.61	365,770,966.85
September-16	36.0	12,202,201.75	439,279,263.04
October-16	34.5	11,683,828.47	403,092,082.26
November-16	36.0	32,353,303.49	1,164,718,925.74
December-16	34.5	72,233,779.52	2,492,065,393.37
Total Gas Supply Costs	34.7	\$659,856,710.59	\$22,908,642,187.24

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
CALCULATION OF LAG DAYS FOR SALARY AND WAGES
BASED ON LEAD/LAG STUDY FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2016

Month of Payment	(Lead)/ Lag Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-16	14.0	\$56,150,368.50	\$785,839,828.35
February-16	14.0	61,047,396.71	853,032,081.98
March-16	14.7	105,154,729.28	1,543,632,573.82
April-16	14.0	60,257,495.64	843,919,248.36
May-16	14.0	59,652,674.38	835,267,452.67
June-16	14.1	80,948,287.19	1,141,842,298.12
July-16	14.0	60,722,016.38	849,097,525.27
August-16	13.8	74,818,346.79	1,033,999,234.20
September-16	14.0	62,244,328.22	869,510,138.50
October-16	14.0	63,271,171.66	883,231,542.07
November-16	14.1	85,089,470.21	1,197,937,650.17
December-16	14.0	62,933,291.53	879,774,774.53
Total Salary And Wages	14.1	\$832,289,576.49	\$11,717,084,348.01

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
CALCULATION OF LAG DAYS FOR PENSIONS
BASED ON LEAD/LAG STUDY FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2016

Service Period		Payment	(Lead)/	Amount	Weighted
From	To	Date	Lag Days		Amount
(1)	(2)	(3)	(4)	(5)	(6)
1/1/16	12/31/16	1/31/16	(152.5)	8.33%	(12.7)
1/1/16	12/31/16	2/29/16	(123.5)	8.33%	(10.3)
1/1/16	12/31/16	3/31/16	(92.5)	8.33%	(7.7)
1/1/16	12/31/16	4/30/16	(62.5)	8.33%	(5.2)
1/1/16	12/31/16	5/31/16	(31.5)	8.33%	(2.6)
1/1/16	12/31/16	6/30/16	(1.5)	8.33%	(0.1)
1/1/16	12/31/16	7/31/16	29.5	8.33%	2.5
1/1/16	12/31/16	8/31/16	60.5	8.33%	5.0
1/1/16	12/31/16	9/30/16	90.5	8.33%	7.5
1/1/16	12/31/16	10/31/16	121.5	8.33%	10.1
1/1/16	12/31/16	11/30/16	151.5	8.33%	12.6
1/1/16	12/31/16	12/31/16	182.5	8.33%	15.2
Total Pensions			<u>14.3</u>	<u>100%</u>	<u>14.3</u> *

* - The lag is usually calculated based on the cash contributions to the trusts and doing so indicates -68.3 lag days. However, because an asset / liability analysis was done, the pension lag calculated above is based on the booking of the expense.

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
CALCULATION OF LAG DAYS FOR MEDICAL INSURANCE
BASED ON LEAD/LAG STUDY FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2016

Month of Payment	(Lead)/ Lag Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-16	13.0	\$22,050,714.13	\$286,560,704.31
February-16	13.5	24,671,059.64	332,368,097.94
March-16	19.4	46,372,355.38	897,309,970.70
April-16	11.6	29,857,523.30	347,631,896.43
May-16	21.6	36,321,480.32	783,188,508.04
June-16	12.3	31,825,362.36	391,727,449.00
July-16	12.6	29,960,234.58	378,396,585.29
August-16	23.2	38,402,917.11	889,637,127.10
September-16	12.3	35,364,594.29	433,422,463.61
October-16	14.2	26,784,407.12	379,464,681.66
November-16	16.6	39,326,749.96	653,426,843.44
December-16	10.7	35,971,642.37	383,359,890.77
Total Medical Insurance	15.5	\$396,909,040.56	\$6,156,494,218.27

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
CALCULATION OF LAG DAYS FOR DENTAL PLAN
BASED ON LEAD/LAG STUDY FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2016

Month of Payment	(Lead)/ Lag Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-16	1.8	\$916,545.55	\$1,636,863.62
February-16	1.7	1,183,030.85	2,001,450.34
March-16	2.0	1,207,458.26	2,393,196.57
April-16	1.4	1,194,473.25	1,673,626.67
May-16	2.3	978,024.98	2,213,582.20
June-16	2.7	1,036,170.51	2,782,947.52
July-16	3.1	930,451.13	2,869,787.22
August-16	1.5	917,120.94	1,414,566.37
September-16	3.4	881,358.25	2,986,032.58
October-16	3.1	830,080.00	2,584,404.29
November-16	2.8	788,235.88	2,184,583.22
December-16	1.8	845,389.52	1,534,785.56
Total Dental Plan	2.2	\$11,708,339.12	\$26,275,826.15

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
CALCULATION OF LAG DAYS FOR GROUP LIFE INSURANCE
BASED ON LEAD/LAG STUDY FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2016

Month of Payment	(Lead)/ Lag Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-16	9.0	\$705,072.40	\$6,345,651.60
February-16	11.0	704,115.17	7,745,266.87
March-16	7.0	702,449.22	4,917,144.54
April-16	5.5	705,803.51	3,881,919.31
May-16	9.0	704,373.26	6,339,359.34
June-16	0.0	0.00	0.00
July-16	12.8	1,408,080.51	17,960,519.73
August-16	10.0	701,053.01	7,010,530.05
September-16	13.5	697,781.62	9,420,051.87
October-16	15.0	696,694.28	10,450,414.20
November-16	13.5	695,433.89	9,388,357.52
December-16	7.0	694,191.44	4,859,340.08
Total Group Life Insurance	<u>10.5</u>	<u>\$8,415,048.31</u>	<u>\$88,318,555.10</u>

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
CALCULATION OF LAG DAYS FOR THRIFT & 401K PLANS
BASED ON LEAD/LAG STUDY FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2016

Month of Payment	(Lead)/ Lag Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-16	12.0	\$2,678,705.52	\$32,144,466.24
February-16	10.0	2,838,653.24	28,386,532.40
March-16	(7.8)	6,955,981.21	-54,351,412.65
April-16	12.5	2,860,182.12	35,752,276.50
May-16	10.0	2,921,499.17	29,214,991.70
June-16	14.5	3,908,908.46	56,679,172.67
July-16	12.0	2,838,864.38	34,066,372.56
August-16	9.0	2,901,191.86	26,110,726.74
September-16	13.5	3,244,009.39	43,794,126.77
October-16	11.0	2,866,229.29	31,528,522.19
November-16	12.5	3,044,266.52	38,053,331.50
December-16	13.0	3,828,773.25	49,774,052.25
Total Thrift & 401K Plans	8.6	\$40,887,264.41	\$351,153,158.87

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
CALCULATION OF LAG DAYS FOR DISABILITY
BASED ON LEAD/LAG STUDY FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2016

Month of Payment	(Lead)/ Lag Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-16	9.0	\$101,679.08	\$915,111.72
February-16	11.5	101,358.36	1,165,621.14
March-16	6.0	101,280.99	607,685.94
April-16	5.5	102,943.37	566,188.54
May-16	8.0	102,883.93	823,071.44
June-16	101.8	387,643.60	39,451,332.60
July-16	9.0	103,260.14	929,341.26
August-16	34.2	701,313.48	23,980,134.61
September-16	14.5	102,772.36	1,490,199.22
October-16	5.0	102,935.10	514,675.50
November-16	12.5	103,140.99	1,289,262.38
December-16	35.6	435,448.25	15,507,974.75
Total Disability	35.7	\$2,446,659.65	\$87,240,599.09

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
CALCULATION OF LAG DAYS FOR WORKERS' COMPENSATION
BASED ON LEAD/LAG STUDY FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2016

Month of Payment <u>(1)</u>	(Lead)/ Lag Days <u>(2)</u>	Amount <u>(3)</u>	Weighted Amount <u>(4)</u>
January-16	0.0	\$0.00	\$0.00
February-16	0.0	0.00	0.00
March-16	0.0	0.00	0.00
April-16	0.0	0.00	0.00
May-16	0.0	0.00	0.00
June-16	134.0	139,069.25	18,635,279.50
July-16	0.0	0.00	0.00
August-16	86.0	140,869.25	12,114,755.50
September-16	17.5	142,669.25	2,496,711.88
October-16	0.0	0.00	0.00
November-16	0.0	0.00	0.00
December-16	44.5	142,669.25	6,348,781.63
Total Workers' Compensation	<u>70.0</u>	<u>\$565,277.00</u>	<u>\$39,595,528.50</u>

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
CALCULATION OF LAG DAYS FOR SERVICE COMPANY EXPENSE
BASED ON LEAD/LAG STUDY FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2016

Month of Payment	(Lead)/ Lag Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-16	40.0	\$65,659,309.57	\$2,626,372,382.80
February-16	40.0	37,985,401.83	1,519,416,073.20
March-16	38.0	45,585,979.55	1,732,267,222.90
April-16	41.0	52,720,245.78	2,161,530,076.98
May-16	38.5	42,846,277.75	1,649,581,693.38
June-16	39.0	55,840,749.03	2,177,789,212.17
July-16	36.5	47,713,599.83	1,741,546,393.80
August-16	39.0	44,192,908.16	1,723,523,418.24
September-16	35.0	53,018,003.71	1,855,630,129.85
October-16	35.5	52,705,657.24	1,871,050,832.02
November-16	38.0	51,173,451.85	1,944,591,170.30
December-16	37.5	85,329,825.18	3,199,868,444.25
Total Service Company Expense	38.1	\$634,771,409.48	\$24,203,167,049.88

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
CALCULATION OF LAG DAYS FOR OTHER O&M EXPENSES
BASED ON LEAD/LAG STUDY FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2016

Month of Payment	(Lead)/ Lag Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-16	31.7	\$248,019,550.92	\$7,853,312,560.46
February-16	6.3	1,695,965.68	10,686,257.88
March-16	0.0	0.00	0.00
April-16	0.0	0.00	0.00
May-16	38.0	210,012,599.55	7,972,354,642.47
June-16	34.1	4,573,371.74	155,809,999.24
July-16	0.0	0.00	0.00
August-16	34.6	307,191,743.24	10,613,774,022.20
September-16	30.2	6,712,459.99	202,465,365.88
October-16	0.0	0.00	0.00
November-16	0.0	0.00	0.00
December-16	33.1	202,077,524.48	6,693,644,502.42
Total Other O&M Expenses	34.2	\$980,283,215.60	\$33,502,047,350.56

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
CALCULATION OF LAG DAYS FOR CURRENT FEDERAL TAXES
BASED ON LEAD/LAG STUDY FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2016

<u>Service Period</u>		<u>Payment</u>	<u>(Lead)/</u>	<u>Amount</u>	<u>Weighted</u>
<u>From</u>	<u>To</u>	<u>Date</u>	<u>Lag Days</u>		<u>Amount</u>
(1)	(2)	(3)	(4)	(5)	(6)
<u>Federal Income Taxes (Current)</u>					
1/1/16	12/31/16	4/15/16	(77.5)	25%	(19.4)
1/1/16	12/31/16	6/15/16	(16.5)	25%	(4.1)
1/1/16	12/31/16	9/15/16	75.5	25%	18.9
1/1/16	12/31/16	12/15/16	166.5	25%	41.6
Total Federal Income Taxes (Current)			<u>37.0</u>	<u>100%</u>	<u>37.0</u>

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
CALCULATION OF LAG DAYS FOR CURRENT STATE (CBT)
BASED ON LEAD/LAG STUDY FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2016

<u>Service Period</u>		<u>Payment</u>	<u>(Lead)/</u>	<u>Amount</u>	<u>Weighted</u>
<u>From</u>	<u>To</u>	<u>Date</u>	<u>Lag Days</u>		<u>Amount</u>
(1)	(2)	(3)	(4)	(5)	(6)
<u>Current State (CBT)</u>					
1/1/16	12/31/16	4/15/16	(77.5)	25%	(19.4)
1/1/16	12/31/16	5/20/16	(42.5)	50% *	(21.3)
1/1/16	12/31/16	6/15/16	(16.5)	25%	(4.1)
1/1/16	12/31/16	12/15/16	166.5	0%	0.0
Total Current State (CBT)			<u>(44.8)</u>	<u>100%</u>	<u>(44.8)</u>

* - (UTUA payment)

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
CALCULATION OF LAG DAYS FOR TAXES OTHER THAN INCOME TAX
BASED ON LEAD/LAG STUDY FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2016

Month of Payment	(Lead)/ Lag Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
Real Estate Tax (Sch. 20)	(23.0)	\$18,052,823.66	-\$415,003,307.50
Payroll Taxes (Sch. 21)	17.8	58,162,839.68	1,036,637,517.81
New Jersey Sales and Use Tax (Sch. 22)	34.8	17,970,966.00	624,602,215.00
Newark City Tax (Sch. 23)	68.2	636,659.41	43,422,310.99
Total Taxes Other Than Income Tax	13.6	\$94,823,288.75	\$1,289,658,736.30

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
CALCULATION OF LAG DAYS FOR REAL ESTATE TAX
BASED ON LEAD/LAG STUDY FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2016

Month of Payment <u>(1)</u>	(Lead)/ Lag Days <u>(2)</u>	Amount <u>(3)</u>	Weighted Amount <u>(4)</u>
January-16	(163.3)	\$4,156,706.34	-\$678,605,300.94
February-16	0.0	0.00	0.00
March-16	(105.5)	87,887.55	-9,272,136.53
April-16	(73.0)	4,531,026.19	-330,728,210.98
May-16	0.0	0.00	0.00
June-16	0.0	0.00	0.00
July-16	19.5	2,884,545.26	56,345,316.11
August-16	36.6	1,833,604.52	67,147,482.60
September-16	0.0	0.00	0.00
October-16	105.3	4,559,053.80	480,109,542.23
November-16	0.0	0.00	0.00
December-16	0.0	0.00	0.00
Total Real Estate Tax	<u>(23.0)</u>	<u>\$18,052,823.66</u>	<u>-\$415,003,307.50</u>

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
CALCULATION OF LAG DAYS FOR PAYROLL TAXES
BASED ON LEAD/LAG STUDY FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2016

Month of Payment	(Lead)/ Lag Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-16	14.0	\$4,149,009.31	\$58,213,893.01
February-16	14.0	4,474,011.63	62,498,066.73
March-16	14.7	7,785,131.31	114,266,301.94
April-16	41.3	6,846,515.09	282,571,956.76
May-16	14.0	4,348,752.04	60,782,031.86
June-16	18.4	6,394,760.61	117,571,695.29
July-16	13.9	4,287,987.24	59,599,054.27
August-16	13.7	5,184,012.49	71,048,484.03
September-16	15.4	4,071,833.34	62,809,889.46
October-16	13.8	3,623,498.59	50,028,571.46
November-16	13.9	4,235,811.53	58,927,626.54
December-16	13.9	2,761,516.50	38,319,946.51
Total Payroll Taxes	17.8	\$58,162,839.68	\$1,036,637,517.81

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
CALCULATION OF LAG DAYS FOR NEW JERSEY SALES AND USE TAX
BASED ON LEAD/LAG STUDY FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2016

<u>Service Period</u>		<u>Payment</u>	<u>(Lead)/</u>		<u>Weighted</u>
<u>From</u>	<u>To</u>	<u>Date</u>	<u>Lag Days</u>	<u>Amount</u>	<u>Amount</u>
(1)	(2)	(3)	(4)	(5)	(6)
<u>New Jersey Sales and Use Tax Payments</u>					
12/1/15	12/31/15	1/20/16	35.0	\$1,830,060.00	\$64,052,100.00
1/1/16	1/31/16	2/20/16	35.0	1,275,434.00	44,640,190.00
2/1/16	2/29/16	3/20/16	34.0	1,289,697.00	43,849,698.00
3/1/16	3/31/16	4/20/16	35.0	1,289,913.00	45,146,955.00
4/1/16	4/30/16	5/20/16	34.5	1,386,558.00	47,836,251.00
5/1/16	5/31/16	6/20/16	35.0	1,369,516.00	47,933,060.00
6/1/16	6/30/16	7/20/16	34.5	1,522,430.00	52,523,835.00
7/1/16	7/31/16	8/20/16	35.0	1,372,957.00	48,053,495.00
8/1/16	8/31/16	9/20/16	35.0	1,582,940.00	55,402,900.00
9/1/16	9/30/16	10/20/16	34.5	1,446,552.00	49,906,044.00
10/1/16	10/31/16	11/20/16	35.0	1,776,653.00	62,182,855.00
11/1/16	11/30/16	12/20/16	34.5	1,828,256.00	63,074,832.00
Total New Jersey Sales and Use Tax Payments			<u>34.8</u>	<u>\$17,970,966.00</u>	<u>\$624,602,215.00</u>

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
CALCULATION OF LAG DAYS FOR NEWARK CITY TAX
BASED ON LEAD/LAG STUDY FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2016

Month of Payment	(Lead)/ Lag Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-16	0.0	\$0.00	\$0.00
February-16	0.0	0.00	0.00
March-16	0.0	0.00	0.00
April-16	79.0	282,972.04	22,343,128.48
May-16	0.0	0.00	0.00
June-16	59.1	188,147.96	11,128,456.08
July-16	0.0	0.00	0.00
August-16	0.0	0.00	0.00
September-16	60.1	165,539.41	9,950,726.43
October-16	0.0	0.00	0.00
November-16	0.0	0.00	0.00
December-16	0.0	0.00	0.00
Total Newark City Tax	<u>68.2</u>	<u>\$636,659.41</u>	<u>\$43,422,310.99</u>

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
CALCULATION OF LAG DAYS FOR NEW JERSEY ENERGY SALES TAX
BASED ON LEAD/LAG STUDY FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2016

Month of Payment	(Lead)/ Lag Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-16	0.0	\$0.00	\$0.00
February-16	35.0	33,767,902.00	1,181,876,570.00
March-16	34.0	34,976,238.00	1,189,192,092.00
April-16	35.0	31,518,032.00	1,103,131,120.00
May-16	(99.8)	235,849,788.00	-23,538,321,014.00
June-16	35.0	21,584,654.00	755,462,890.00
July-16	0.0	0.00	0.00
August-16	0.0	0.00	0.00
September-16	0.0	0.00	0.00
October-16	0.0	0.00	0.00
November-16	0.0	0.00	0.00
December-16	0.0	0.00	0.00
Total New Jersey Energy Sales Tax	<u>(54.0)</u>	<u>\$357,696,614.00</u>	<u>-\$19,308,658,342.00</u>

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
CALCULATION OF LAG DAYS FOR PENSION CASH
BASED ON LEAD/LAG STUDY FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2016

Month of Payment	(Lead)/ Lag Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
January-16	15.0	\$309,989.74	\$4,649,846.10
February-16	14.0	6,132.35	85,852.90
March-16	(101.0)	12,830,567.11	-1,296,439,493.35
April-16	14.5	236,336.79	3,426,883.46
May-16	15.0	239,110.60	3,586,659.00
June-16	14.5	247,110.83	3,583,107.04
July-16	15.0	252,767.35	3,791,510.25
August-16	15.0	256,077.62	3,841,164.30
September-16	49.0	517,137.77	25,337,694.19
October-16	16.4	260,682.28	4,279,577.09
November-16	14.5	242,608.74	3,517,826.73
December-16	133.4	931,759.13	124,283,573.27
Total Pension Cash	(68.3)	\$16,330,280.31	-\$1,116,055,799.04

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
CALCULATION OF LAG DAYS FOR OPEB CASH
BASED ON LEAD/LAG STUDY FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2016

Month of Payment	(Lead)/ Lag Days	Amount	Weighted Amount
(1)	(2)	(3)	(4)
<u>Employer Contribution To OPEB Trust</u>			
January-16	0.0	\$0.00	\$0.00
February-16	0.0	0.00	0.00
March-16	(105.5)	14,000,000.00	-1,477,000,000.00
April-16	0.0	0.00	0.00
May-16	0.0	0.00	0.00
June-16	0.0	0.00	0.00
July-16	0.0	0.00	0.00
August-16	0.0	0.00	0.00
September-16	0.0	0.00	0.00
October-16	0.0	0.00	0.00
November-16	0.0	0.00	0.00
December-16	0.0	0.00	0.00
<u>Employer Benefit Payments</u>			
January-16	15.0	4,059,439.81	60,891,597.15
February-16	14.0	5,311,748.84	74,364,483.76
March-16	15.0	8,951,449.87	134,271,748.05
April-16	14.5	4,825,945.18	69,976,205.11
May-16	15.0	5,678,930.30	85,183,954.50
June-16	14.5	5,348,929.60	77,559,479.20
July-16	15.0	6,793,651.66	101,904,774.90
August-16	15.0	8,253,098.40	123,796,476.00
September-16	14.5	-12,463,005.19	-180,713,575.26
October-16	15.0	5,767,657.35	86,514,860.25
November-16	14.5	3,473,741.68	50,369,254.36
December-16	15.0	5,725,932.82	85,888,992.30
Total OPEB Cash	<u>(10.8)</u>	<u>\$65,727,520.32</u>	<u>-\$706,991,749.68</u>

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
SUMMARY OF NET ASSETS AND LIABILITIES
REQUIRED FOR COST OF SERVICE
BASED ON THIRTEEN MONTH AVERAGE FOR THE PERIOD ENDING SEPTEMBER 30, 2017

(THOUSANDS)

	Electric (1)	Gas (2)
<u>Assets</u>		
Other Accounts Receivable	\$18,666	\$4,904
Other Post Retirement Benefits	740,305	613,334
Prepayments	334	277
Special Deposits	24,670	20,438
Miscellaneous Deferred Debits	16,632	10,985
Total Assets	800,607	649,938
 <u>Liabilities</u>		
Other Post Retirement Benefits	663,959	550,082
Current & Accrued Liabilities	56,357	46,691
Accounts Payable	(8)	(7)
Miscellaneous Current and Accrued Liabilities	18,304	11,658
Other Deferred Credits	808	132
Total Liabilities	739,420	608,556
 Net Asset / Liability	 \$61,187	 \$41,382