BEFORE THE
STATE OF RHODE ISLAND AND PROVIDENCE PLANATIONS
PUBLIC UTILITIES COMMISSION

In RE: The Narragansett Electric Company d/b/a National Grid's Application to Change Electric and Gas Base Distribution Rates	Docket No. 4770

DIRECT TESTIMONY AND SCHEDULES

OF

ROXIE MCCULLAR

ON BEHALF OF THE

DIVISION OF PUBLIC UTILITIES AND CARRIERS

ADDRESSING DEPRECIATION

April 6, 2018

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I. Introduction

Q. Please state your name and business address?

A. My name is Roxie McCullar. My business address is 8625 Farmington Cemetery Road, Pleasant Plains, Illinois 62677.

Q. What is your present occupation?

A. Since 1997, I have been employed as a consultant with the firm of William Dunkel and Associates and have regularly provided consulting services in regulatory proceedings throughout the country.

Q. Please describe your educational and professional background.

A. I am a Certified Public Accountant licensed in the state of Illinois. I received my Master of Arts degree in Accounting from the University of Illinois in Springfield. I received my Bachelor of Science degree in Mathematics from Illinois State University in Normal.

Q. Have you prepared an appendix that describes your qualifications?

A. Yes. My qualifications and previous experiences are shown on the attached Appendix A.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of the Division of Public Utilities and Carriers ("Division").

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to address the depreciation rates for electric plant and natural gas plant filed by National Grid ("National Grid" or "the Company") in this proceeding.

II. Summary

Q. Can you summarize your recommendations?

A. Yes. I recommend that the Division proposed depreciation rates shown on Schedule RMM-1 for Electric Plant[1] and Schedule RMM-2 for Natural Gas Plant be approved for National Grid in Rhode Island.

Q. Did you participate in a field visit of National Grid's facilities in Rhode Island?

A. Yes. On March 1, 2018, I participated in field visits of several different National Grid project locations.[2] At each location, Company personnel discussed the facilities and ongoing projects with me. The information learned, and observations made during the field visit were incorporated in my analysis of the Company's depreciation rates.

Q. Can you summarize the Division proposed depreciation rates?

A. Yes. The Division proposed depreciation rates compared to the National Grid proposed depreciation rates are summarized below:

[1] Transmission Plant is not at issue in this proceeding since Transmission Plant depreciation expense is removed in Schedule MAL-6-Elec.
[2] I visited the South Street Substation, and three different sites where active aerial and underground projects were underway.

Table 1: Comparison of Annual Accrual Rates

Functional Category	12/31/16 Investment	Current Approved Accrual Rate	National Grid Proposed Accrual Rate	Division Proposed Accrual Rate
A				
Electric Plant				
Transmission Plant[3]	817,852,942	2.27%	2.89%	2.89%
Distribution Plant	1,502,833,925	3.22%	3.20%	3.10%
General Plant	64,221,447	3.57%	3.39%	3.39%
Total Electric Plant	**2,384,908,314**	**2.91%**	**3.09%**	**3.02%**
Natural Gas Plant				
Production Plant	3,973,098	-10.48%	12.45%	12.45%
Other Storage Plant	21,962,191	2.13%	2.29%	2.29%
Distribution Plant	1,017,764,453	3.25%	3.12%	2.79%
General Plant	14,206,641	3.31%	4.01%	4.01%
Total Natural Gas Plant	**1,057,906,383**	**3.18%**	**3.17%**	**2.85%**

The 2016 annualized accrual based on December 31, 2016, investments using the Division proposed depreciation rates compared to National Grid's proposed depreciation rates are summarized below:[4]

[3] Transmission Plant is not at issue in this proceeding since Transmission Plant depreciation expense is removed in Schedule MAL-6-Elec.

[4] Schedule RMM-1 for Electric Plant and Schedule RMM-2 for Natural Gas Plant shows the annual accruals based on the 12/31/16 investment levels. However, in the future as the investments change, the depreciation rates will be applied to the then current investments, which will produce a different annual accrual amount.

Table 2: Comparison of Annual Accrual Based on December 31, 2016 Investments

Functional Category	12/31/16 Investment	National Grid Proposed Accrual Amount	Division Proposed Accrual Amount	Difference from Company
Electric Plant				
Transmission Plant[5]	817,852,942	23,629,519	23,629,519	0
Distribution Plant	1,502,833,925	48,058,754	46,546,468	(1,512,286)
General Plant	64,221,447	2,178,774	2,178,774	0
Unrecovered Reserve Adjustment		(247,009)	(247,009)	0
Total Electric Plant	**2,384,908,314**	**73,620,038**	**72,107,752**	**(1,512,286)**
Natural Gas Plant				
Production Plant	3,973,098	494,709	494,709	0
Other Storage Plant	21,962,191	503,941	503,941	0
Distribution Plant	1,017,764,453	31,782,890	28,423,601	(3,359,289)
General Plant	14,206,641	569,708	569,708	0
Unrecovered Reserve Adjustment		186,500	186,500	0
Total Natural Gas Plant	**1,057,906,383**	**33,537,748**	**30,178,459**	**(3,359,289)**

III. Definition of Depreciation

Q. Could you please provide the definition of depreciation?

A. Yes. The Federal Energy Regulatory Commission ("FERC") definition of depreciation contained in the FERC Uniform System of Accounts ("FERC USOA") for Electric Plant states:

> "12. *Depreciation*, as applied to depreciable electric plant, means the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of electric plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance. Among the causes to be given consideration are wear and tear,

[5] Transmission Plant is not at issue in this proceeding since Transmission Plant depreciation expense is removed in Schedule MAL-6-Elec.

> decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand and requirements of public authorities."[6]

Similarly, the FERC USOA for Natural Gas Plant definition of depreciation states:

> "12. B. *Depreciation*, as applied to depreciable gas plant, means the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of gas plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance. Among the causes to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand and requirements of public authorities, and, in the case of natural gas companies, the exhaustion of natural resources."[7]

The FERC USOA definition of "depreciation" specifically states depreciation is a "loss in service value." FERC defines service value as "the difference between original cost and net salvage value."[8]

Since this is a utility regulation proceeding, I rely on the FERC USOA definition of "depreciation" which focuses on the "loss of service value."

Q. Please provide a brief description of how remaining life depreciation rates are calculated.

A. The remaining life depreciation rate formula is:

$$\text{Depreciation Rate} = \frac{(100\% - \text{Book Reserve \%} - \text{Future Net Salvage \%})}{\text{Average Remaining Life}}$$

[6] FERC Uniform System of Accounts Prescribed for Public Utilities and Licensees Subject to the Provisions of the Federal Power Act. (18 CFR part 101).
[7] FERC Uniform System of Accounts Prescribed for Natural Gas Companies Subject to the Provisions of the Natural Gas Act. (18 CFR part 201).
[8] Definition 37, FERC Uniform System of Accounts Prescribed for Public Utilities and Licensees Subject to the Provisions of the Federal Power Act. (18 CFR part 101). Also see, Definition 37, FERC Uniform System of Accounts Prescribed for Natural Gas Companies Subject to the Provisions of the Natural Gas Act. (18 CFR part 201).

In the formula above, the book reserve percent is the actual reserve on the Company's books divided by the actual plant in service investment on the Company's books. The book reserve percent is based on actual data from the Company's books and is not estimated in the depreciation study.

The future net salvage percent and the average remaining life are estimates proposed in the Depreciation Study. The Depreciation Study estimates the projected average service life of the assets, the retirement pattern of those assets, and the cost of removing or retiring those assets less any expected salvage from the sale, scrap, insurance, reimbursements, etc. of those assets. These estimates are referred to as depreciation parameters. The projected average service life and retirement pattern (survivor curve) are used to calculate the average remaining life. The estimated future net salvage percent is the estimated future cost of removing or retiring less any estimated future salvage from sale, scrap, insurance, reimbursements, etc.

IV. Mass Property Future Net Salvage

Q. Do you have a recommendation regarding National Grid's proposed future net salvage percent for Distribution Plant?

A. Yes. For Mass Property Distribution Accounts 368 (Electric), 376 (Natural Gas), and 380 (Natural Gas), I recommend future net salvage percentages that differ from National Grid's proposal as shown in Table 3 below:

Table 3: Comparison of Distribution Plant Future Net Salvage ("FNS") Percent Proposals

Account	Current Approved FNS%	National Grid's Proposed FNS%	Division's Proposed FNS%
Electric Account 368, Line Transformers	-30%	-50%	-30%
Natural Gas Account 376, Mains	-65%	-70%	-50%
Natural Gas Account 380, Services	-65%	-80%	-65%

Q. Please explain what is meant by net salvage.

A. In FERC USOA, Net salvage value is defined as "the salvage value of property retired less the cost of removal."[9] Salvage value is defined as "the difference between original cost and net salvage value of electric plant."[10] Cost of removal is defined as "the cost of demolishing, dismantling, tearing down or otherwise removing electric plant, including cost of transportation and handling incidental thereto. It does not include the cost of removal activities associated with asset retirement obligations that are capitalized as part of the tangible long-lived assets that give rise to the obligation."[11]

Q. What impact does net salvage have on depreciation rates?

A. Positive net salvage results in a lower depreciation rate, all other things being equal. Negative net salvage results in a higher depreciation rate, all other things being equal.

[9] Definition 19, FERC Uniform System of Accounts Prescribed for Public Utilities and Licensees Subject to the Provisions of the Federal Power Act. (18 CFR part 101). Also see, Definition 23, FERC Uniform System of Accounts Prescribed for Natural Gas Companies Subject to the Provisions of the Natural Gas Act. (18 CFR part 201).
[10] Definition 37, FERC Uniform System of Accounts Prescribed for Public Utilities and Licensees Subject to the Provisions of the Federal Power Act. (18 CFR part 101). Also see, Definition 35, FERC Uniform System of Accounts Prescribed for Natural Gas Companies Subject to the Provisions of the Natural Gas Act. (18 CFR part 201).
[11] Definition 10, FERC Uniform System of Accounts Prescribed for Public Utilities and Licensees Subject to the Provisions of the Federal Power Act. (18 CFR part 101). Also see, Definition 10, FERC Uniform System of Accounts Prescribed for Natural Gas Companies Subject to the Provisions of the Natural Gas Act. (18 CFR part 201).

As stated in NARUC's *Public Utilities Depreciation Practices*:

> "Positive net salvage occurs when gross salvage exceeds cost of retirement, and negative net salvage occurs when cost of retirement exceeds gross salvage."[12]

The estimated future net salvage is part of the annual depreciation accrual, which is credited to the depreciation reserve to cover the estimated future net salvage costs the Company may incur associated with plant asset's retirement.

Q. What factors did National Grid consider in estimating the future net salvage percent?

A. Both of the Depreciation Studies for Electric Plant and Natural Gas Plant have a similar statement indicating that "statistical analyses of historical data" "contributed significantly toward the net salvage estimates". The Depreciation Study for Electric Plant states:

> "Statistical analyses of historical data for the period 2004 through 2016 contributed significantly toward the net salvage estimates for the following 19 plant accounts, representing approximately 89 percent of the depreciable plant. However, for some accounts the estimates are conservative (i.e., less negative) when compared to the historical data."[13]

Q. What "statistical analyses of historical data" did National Grid include in the Depreciation Studies?

A. In the Depreciation Studies the statistical analyses of historical data are included in Section VIII. Regarding the statistical analyses, the Depreciation Studies state:

> "Cost of removal and salvage were expressed as percents of the original cost of plant retired, both on annual and three-year moving average bases. The most recent five-year average also was calculated for consideration.

[12] Page 18, *Public Utilities Depreciation Practices*, published by National Association of Regulatory Commissioners (NARUC), 1996.
[13] Page 38 (IV-2) of Schedule NWA-2 Electric. Also see a similar quote on page 38 (IV-2) for Natural Gas Plant in Schedule NWA-2 Gas.

> The net salvage estimates by account are expressed as a percent of the original cost of plant retired."[14]

The historical net salvage ratios in National Grid's statistical analyses of historic data are calculated by dividing the actual net salvage amount by the historic original cost of the plant.

Q. Are the historical net salvage ratios in National Grid's statistical analyses impacted by past inflation rates?

A. Yes. As pointed out in Wolf and Fitch's *Depreciation Systems*:

> "Salvage ratios are a function of inflation."[15]

The calculation of the historic net salvage ratio includes the impact of high historic inflation rates, since the net salvage amount in the numerator is in current dollars and the cost of the plant in the denominator which may have been installed decades before are in historic dollars. In other words, due to inflation the amounts in numerator and denominator of the net salvage ratio are in different price levels.

[14] Page 38 (IV-2) of Schedule NWA-2 Electric. Also see a similar quote on page 38 (IV-2) for Natural Gas Plant in Schedule NWA-2 Gas.
[15] Page 267, Wolf, Frank K. and W. Chester Fitch, *Depreciation Systems* Iowa State University Press, 1994.

Q. Please explain what is meant by high historical inflation in National Grid's net salvage analyses.

A. For these accounts the high historic inflation levels in the mid 1970's and early 1980's impacts the net salvage ratio. For example, the inflation rate according to the U.S. Bureau of Labor Statistics in 1979 was 11.3%, in 1980 was 13.5%, and in 1981 was 10.3%.[16]

National Grid's use of the net salvage analyses which includes these high historical inflation rates assumes that the same high inflation rates will continue in the future, this is not a reasonable assumption.

Q. Is the fact that historic inflation is included in the net salvage ratio recognized in depreciation texts?

A. Yes. NARUC's *Public Utilities Depreciation Practices*, regarding inflation states:

> "The sensitivity of salvage and cost of retirement to the age of the property retired is also troublesome. Due to inflation and other factors, there is a tendency for costs of retirement, typically labor, to increase more rapidly than material prices."[17]

NARUC concludes that careful consideration should be given to the net salvage estimate stating:

> "Cost of retirement, however, must be given careful thought and attention, since for certain types of plant, it can be the most critical component of the depreciation rate."[18]

[16] Table 24 of U.S. Bureau of Labor Statistic's "Consumer Price Index – December 2017." (Attached as Schedule RMM-3)
[17] Page 19, *Public Utilities Depreciation Practices*, published by National Association of Regulatory Commissioners (NARUC), 1996.
[18] Page 19, *Public Utilities Depreciation Practices*, published by National Association of Regulatory Commissioners (NARUC), 1996.

Additionally, Wolf and Fitch's *Depreciation Systems,* also points out that using a net salvage ratio that includes inflated dollars in the numerator and historic dollars in the denominator is a ratio using different units, stating:

> "One inherent characteristic of the salvage ratio is that the numerator and denominator are measured in different units; the numerator is measured in dollars at the time of retirement, while the denominator is measured in dollars at the time of installation. Inflation is an economic fact of life and although both numerator and denominator are measured in dollars, the timing of the cash flows reflects different price levels."[19]

Q. What is an analysis method discussed in the depreciation texts that addresses the historic inflation inherent in the salvage ratio?

A. Wolf and Fitch's *Depreciation Systems*, discusses a method that first converts "the observed dollars to constant dollars"[20] which removes the high historic inflation rates, and then use a more reasonable estimate of the inflation.[21]

In *Depreciation Systems* it is suggested to first convert the salvage ratio to constant dollars by using the consumer price index ("CPI")[22] to deflate the actual net salvage amounts to the year the related retired plant was first installed. The deflation of the net salvage amounts results in a salvage ratio in which both the numerator and denominator are "measured in dollars of the same price level."[23]

[19] Page 53, Wolf, Frank K. and W. Chester Fitch, *Depreciation Systems* Iowa State University Press, 1994.
[20] Page 61, with a similar statement on page 263, Wolf, Frank K. and W. Chester Fitch, *Depreciation Systems* Iowa State University Press, 1994.
[21] Page 265, Wolf, Frank K. and W. Chester Fitch, *Depreciation Systems* Iowa State University Press, 1994.
[22] Page 61, Wolf, Frank K. and W. Chester Fitch, *Depreciation Systems* Iowa State University Press, 1994. The consumer price index is published by the U.S. Bureau of Labor Statistic, see Schedule RMM-3.
[23] Pages 263-264, Wolf, Frank K. and W. Chester Fitch, *Depreciation Systems* Iowa State University Press, 1994.

Once the salvage amounts are stated at the same price level of the retired plant, and the impact of the high historic inflation levels have been removed, the next step is to use a more reasonable estimate of inflation to aid in forecasting the future net salvage amounts.[24]

Q. What is a reasonable estimate of inflation to use in statistical analyses of net salvage?

A. A reasonable estimate of inflation is 2%, which is significantly lower than the inflation assumed in the unadjusted historical net salvage analysis included in the Company's Depreciation Studies.

The Federal Open Market Committee ("FOMC"), which is a key entity of the Federal Reserve System,[25] is mandated by the U.S. Congress to promote "maximum employment, stable prices, and moderate long-term interest rates."[26]

FOMC has determined that setting monetary policies to achieve a 2% inflation rate fulfills its goals. FOMC states:

> "The inflation rate over the longer run is primarily determined by monetary policy, and hence the Committee has the ability to specify a longer-run goal for inflation. The Committee reaffirms its judgment that inflation at the rate of 2 percent, as measured by the annual change in the

[24] Page 265, Wolf, Frank K. and W. Chester Fitch, *Depreciation Systems* Iowa State University Press, 1994.
[25] Page 2 of the October 2016 *The Federal Reserve System Purpose & Functions* (10th edition) states: "There are three key entities in the Federal Reserve System: the Board of Governors, the Federal Reserve Banks (Reserve Banks), and the Federal Open Market Committee (FOMC)."
[26] Federal Open Market Committee January 30, 2018 "Statement of Longer-Run Goals and Monetary Policy Strategy." (Attached as Schedule RMM-4)

> price index for personal consumption expenditures, is most consistent over the longer run with the Federal Reserve's statutory mandate."[27]

As can be seen on Schedule RMM-3, the CPI has averaged around 2% per year for at least the last 20 years.[28]

Q. For Mass Property Distribution Accounts 368 (Electric), 376 (Natural Gas), and 380 (Natural Gas), in which you recommend a future net salvage different than National Grid's recommendation, did you conduct this net salvage analysis described in *Depreciation Systems* that you just discussed?

A. Yes. I did consider the amount of high historic inflation incorporated in Company's historic net salvage analysis. I also considered the information provided during discovery process, the average actual net salvage expense incurred over the most recent time periods, my previous experience in evaluating depreciation studies, and observations during my field visit to National Grid's service area in Rhode Island.

A. <u>Natural Gas Account 376, Mains Future Net Salvage Percent</u>

Q. Can you discuss the estimated future net salvage for Natural Gas Account 376, Mains?

A. Yes. National Grid proposes a -70% based on the historical net salvage for Account 376, Mains in the Depreciation Study. Regarding this proposed -70%, Mr. Allis states:

> "Based on the overall negative 76% net salvage and the most recent 5 years of negative 89%, as well as general knowledge of the property in

[27] Federal Open Market Committee January 30, 2018 "Statement of Longer-Run Goals and Monetary Policy Strategy." (Attached as Schedule RMM-4)
[28] The average inflation rate from 1998 to 2017 is 2.06%. Using the 1998 CPI of 163 and the 2017 CPI of 245.120 as shown in Schedule RMM-3. (163.0 * (1+2.06%)^20years = 245.12).

this account and Narragansett Gas' expectations, I determined that negative 70% is the most appropriate estimate."[29]

The historical -76% and -89% net salvage ratios discussed in Mr. Allis testimony are from page 145 of Schedule NWA-2 and include the impact of the historically high inflation rates discussed in the previous section of this testimony.

Q. Have you performed a net salvage analysis the removes the historic high inflation rates?

A. Yes. As is shown on Schedule RMM-5 when a more reasonable estimate of inflation is used, the overall net salvage is -31% (as opposed to -76% relied on by the Company) and the 5-year average is -36% (as opposed to -89% relied on by the Company).

Table 4: Accounts 376.1, 376.12, and 376.13, Mains			
Historic Data Adjusted for Reasonable Inflation Rate		Proposed Future Net Salvage Percent	
Overall	5-Year Average	National Grid	Division
-31%	-36%	-70%	-50%

Attached as Schedule RMM-5 is the net salvage analysis as described in *Depreciation Systems* which first converts "the observed dollars to constant dollars"[30] and then use a more reasonable estimate of inflation.[31]

[29] Direct Testimony of Ned W. Allis (Gas), page 16, lines 18-21.
[30] Page 61, with a similar statement on page 263, Wolf, Frank K. and W. Chester Fitch, *Depreciation Systems* Iowa State University Press, 1994.
[31] Page 265, Wolf, Frank K. and W. Chester Fitch, *Depreciation Systems* Iowa State University Press, 1994.

Q. What information received from National Grid did you consider in your recommendation of a future net salvage for Natural Gas Account 376, Mains?

A. In response to discovery, the Company stated the a "vast majority" of the gas mains in Account 376 are retired in place. National Grid's response to Division 1-29 states:

> "The vast majority (greater than 95 percent) of Narragansett Gas' mains that are retired are retired in place. The Company infrequently removes retired mains from the ground."[32]

Additionally, during my field visit we visited two projects that involved main replacements and the majority of the old mains were being retired in place. National Grid's response to Division 33-3 states:

> "The only retired pipe that is removed from the ground is related to the areas where connections from the existing and new gas mains are made. These sections are typically less than 10 feet in length each, and constitute less than one percent of a typical project's total retired pipe."[33]

Since the majority of the mains are retired in place, the cost of retiring the old mains would not include the high cost of removing the old mains and minimize the cost of restoring roads and landscape. There would, however, still be some costs related to retirement to make the old mains safe to retire in place. This practice is consistent with the net salvage data discussed above.

Additionally, the Company is in the process of retiring their cast iron and bare steel mains, which are included in the historic salvage data for this account. As stated in Mr.

[32] National Grid's response to Division 1-29, attached as Schedule RMM-6.
[33] National Grid's response to Division 33-3, attached as Schedule RMM-7.

Allis's testimony "The net salvage estimates for gas mains were based on the analysis of historical data for all types of mains (i.e., plastic, steel, and cast iron mains)."[34]

Q. Based on the net salvage analyses and information from the Company, what future net salvage rate do you recommend for Natural Gas Account 376, Mains?

A. Based on the information discussed above, I recommend a -50% future net salvage rate for Natural Gas Account 376, Mains.

A -50% future net salvage is reasonable based on the inflation adjusted net salvage data, the Company's current practice of retiring the Mains in place, and the Company's retirement program for cast iron and bare steel mains.

B. <u>Natural Gas Account 380, Services Future Net Salvage Percent</u>

Q. Can you discuss the estimated future net salvage for Natural Gas Account 380 Services?

A. Yes. National Grid proposes a -80% based on the historical net salvage for Account 380, Services in the Depreciation Study. Regarding the net salvage estimates the Depreciation Study states:

> "Statistical analyses of historical data for the period 2005 through 2016 contributed significantly toward the net salvage estimates…"[35]

[34] Direct Testimony of Ned W. Allis (Gas), page 16, lines 12-13.
[35] Page 38 (IV-2) of Schedule NWA-2 Gas.

Page 149 of Schedule NWA-2 shows the historical net salvage data for Account 380, and includes the impact of the historically high inflation rates discussed in the previous section of this testimony.

Q. Have you performed a net salvage analysis the removes the historic high inflation rates?

A. Yes. As is shown on Schedule RMM-8 when a more reasonable estimate of inflation is used, the overall net salvage is -61% and the 5-year average is -66%.

Table 5: Account 380, Services			
Historic Data Adjusted for Reasonable Inflation Rate		Proposed Future Net Salvage Percent	
Overall	5-Year Average	National Grid	Division
-61%	-66%	-80%	-65%

Attached as Schedule RMM-8 is the net salvage analysis as described in *Depreciation Systems* which first converts "the observed dollars to constant dollars"[36] and then use a more reasonable estimate of the inflation.[37]

Q. What information received from National Grid did you considered in your recommendation of a future net salvage for Natural Gas Account 380, Services?

A. In response to discovery, the Company stated the "services in Account 380 are generally retired in place." National Grid's response to Division 1-31 states:

> "Yes, it is a correct statement to say that the services in Account 380 are generally retired in place. There are very few instances that services were removed from the ground. Once a service is retired, the only piece

[36] Page 61, with a similar statement on page 263, Wolf, Frank K. and W. Chester Fitch, *Depreciation Systems* Iowa State University Press, 1994.
[37] Page 265, Wolf, Frank K. and W. Chester Fitch, *Depreciation Systems* Iowa State University Press, 1994.

physically removed would be the above ground riser located near the foundation (if a riser exists)."[38]

Since the services are retired in place, the cost of retiring the old service would not include the high cost of removing the old services and minimize the cost of restoring roads and landscape. There would, however, still be some costs related to retirement to make the old services safe to retire in place. This practice is consistent with the net salvage data discussed above.

Q. Based on the net salvage analyses and information from the Company, what future net salvage rate do you recommend for Natural Gas Account 380, Services?

A. Based on the information discussed above, I recommend no change the current approved -65% future net salvage rate for Natural Gas Account 380, Services.

A -65% future net salvage is reasonable based on the inflation adjusted net salvage data and the Company's current practice of retiring the Services in place.

C. <u>Electric Account 368, Transformers Future Net Salvage Percent</u>

Q. Can you discuss the estimated future net salvage for Electric Account 368, Transformers?

A. Yes. National Grid proposes a -50% based on the historical net salvage for Account 368, Transformers in the Depreciation Study. Regarding the net salvage estimates the Depreciation Study states:

[38] National Grid's response to Division 1-31, attached as Schedule RMM-9.

> "Statistical analyses of historical data for the period 2004 through 2016 contributed significantly toward the net salvage estimates…"[39]

Page 151 of the Electric Depreciation Study shows the historical net salvage data for Account 368, and includes the impact of the historically high inflation rates discussed in the previous section of this testimony.

Q. Have you performed a net salvage analysis the removes the historic high inflation rates?

A. Yes. As is shown on Schedule RMM-10 when a more reasonable estimate of inflation is used, the overall net salvage is -32% and the 5-year average is -27%.

Table 6: Account 368.1, 368.2, and 368.3, Line Transformers			
Historic Data Adjusted for Reasonable Inflation Rate		Proposed Future Net Salvage Percent	
Overall	5-Year Average	National Grid	Division
-32%	-27%	-50%	-30%

Attached as Schedule RMM-10 is the net salvage analysis as described in *Depreciation Systems* which first converts "the observed dollars to constant dollars"[40] and then use a more reasonable estimate of the inflation.[41]

[39] Page 38 (IV-2) of Schedule NWA-2 Electric.
[40] Page 61, with a similar statement on page 263, Wolf, Frank K. and W. Chester Fitch, *Depreciation Systems* Iowa State University Press, 1994.
[41] Page 265, Wolf, Frank K. and W. Chester Fitch, *Depreciation Systems* Iowa State University Press, 1994.

Q. What future net salvage rate do you recommend for Electric Account 368, Transformers?

A. Based on my review, the continuation of the current approved -30% future net salvage rate is reasonable for Electric Account 368, Transformers.

V. Conclusion

Q. What are your recommendations?

A. For the reasons stated above, I recommend that the Division proposed depreciation rates shown on Schedule RMM-1 for Electric Plant and Schedule RMM-2 for Natural Gas Plant be approved for National Grid in Rhode Island.

The Division proposed depreciation rates shown on Schedule RMM-1 for Electric Plant[42] and Schedule RMM-2 for Natural Gas Plant incorporate the adjustments supported by this testimony.

Q. Does this conclude your direct testimony?

A. Yes.

[42] Transmission Plant is not at issue in this proceeding since Transmission Plant depreciation expense is removed in Schedule MAL-6-Elec. Transmission Plant is shown on Schedule RMM-1 for comparison to National Grid's Schedule NWA-2 Electric pages 49-51.

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Roxie McCullar is a regulatory consultant. She is a licensed Certified Public Account in the state of Illinois. She is a member of the Society of Depreciation Professionals, the American Institute of Certified Public Accountants, and the Illinois CPA Society. She passed the Society of Depreciation Professionals' exam for Certified Depreciation Professional in September of 2016. She received her Master of Arts degree in Accounting from the University of Illinois-Springfield. She received her Bachelor of Science degree in Mathematics from Illinois State University. Over the past 20 years Ms. McCullar has filed testimony in over 50 state regulatory proceedings on depreciation issues and cost allocation for universal service. In addition, Ms. McCullar has assisted Mr. Dunkel in numerous other proceedings.

PRESENT POSITION

William Dunkel and Associates
Position: Consultant

- Prefiled testimony on behalf of the Public Staff of the North Carolina Utilities Commission in a general rate proceeding, North Carolina Docket No. E-7, Sub 1146 in which I addressed electric depreciation issues.
- Prefiled testimony on behalf of the Public Staff of the North Carolina Utilities Commission in a general rate proceeding, North Carolina Docket No. E-2, Sub 1142 in which I addressed electric depreciation issues.
- Prefiled testimony on behalf of Washington State Office of the Attorney General in a general rate proceeding, Washington Docket Nos. UE-170033 & UG-170034 (Consolidated) in which I addressed electric and natural gas depreciation issues.
- Prefiled testimony on behalf of Florida's Office of Public Counsel in a general rate proceeding, Florida Docket No. 160170-EI/160186-EI in which I addressed electric depreciation issues.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in a general rate proceeding involving Kansas Gas Service, Docket No. 16-KGSG-491-RTS in which I addressed natural gas depreciation rate issues.
- Prefiled testimony on behalf Arizona Corporation Commission Utilities Division Staff in a general rate proceeding involving Tucson Electric Power Company, Arizona Docket No. E-01933A-1-0322 in which I addressed electric depreciation issues.
- Testified on behalf Public Interest Advocacy Staff of the Georgia Public Service Commission in Georgia Power Company's 2016 Integrated Resource Plan, Georgia Docket No. 40161 in which I addressed depreciation issues.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in a general rate proceeding involving Atmos Energy, Docket No. 16-ATMG-079-RTS in which I

addressed natural gas depreciation rate issues.

- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in an audit involving Twin Valley Telephone, Inc., Docket No. 15-TWVT-213-AUD in which I addressed cost study issues, allocation of FTTH equipment, and support fund adjustments.
- Testified on behalf of the Kansas Corporation Commission Staff in a general rate proceeding involving Kansas City Power Light Company, Docket No. 15-KCPE-116-RTS in which I addressed electric depreciation rate issues.
- Testified on behalf of the Kansas Corporation Commission Staff in an audit involving Moundridge Telephone Company, Inc., Docket No. 15-MRGT-097-AUD in which I addressed cost study issues and support fund adjustments.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in an audit involving S&T Telephone Cooperative, Inc., Docket No. 14-S&TT-525-KSF in which I addressed cost study issues, allocation of FTTH equipment, and support fund adjustments.
- Co-Sponsored Bench Report on Depreciation in Maine Docket No. 2013-00443 regarding Bangor Hydro Electric Company and Maine Public Service Company (Emera-Maine) depreciation rates in a general rate proceeding.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in an audit involving Wamego Telecommunications Company, Inc., Docket No. 14-WTCT-142-KSF in which I addressed cost study issues, allocation of FTTH equipment, and support fund adjustments.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in an audit involving People Telecommunication LLC, Docket No. 13-PLTT-678-KSF in which I addressed cost study issues, allocation of FTTH equipment, and support fund adjustments.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in an audit involving J.B.N. Telephone Company, Inc., Docket No. 13-JBNT-437-KSF in which I addressed cost study issues, allocation of FTTH equipment, and support fund adjustments.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in an audit involving Zenda Telephone Company, Inc., Docket No. 13-ZENT-065-AUD in which I addressed cost study issues, allocation of FTTH equipment, and support fund adjustments.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in an audit involving Craw-Kan Telephone Cooperative, Inc., Docket No. 13-CRKT-268-KSF in which I addressed cost study issues, allocation of FTTH equipment, and support fund adjustments.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in an audit involving LaHarpe Telephone Company, Inc., Docket No. 12-LHPT-875-AUD in which I addressed cost study issues, allocation of FTTH equipment, and support fund adjustments.

- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in an audit involving Gorham Telephone Company, Docket No. 12-GRHT-633-KSF in which I addressed cost study issues, allocation of FTTH equipment, and support fund adjustments.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in an audit involving S&T Telephone Cooperative Association, Inc., Docket No. 12-S&TT-234-KSF in which I addressed cost study issues, allocation of FTTH equipment, and support fund adjustments.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in general rate proceeding and audit involving Cunningham Telephone Company, Inc., Docket No. 11-CNHT-659-KSF in which I addressed cost study issues, allocation of FTTH equipment, and support fund adjustments.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in general rate proceeding and audit involving Rainbow Telephone Association, Docket No. 11-RNBT-608-KSF in which I addressed cost study issues, allocation of FTTH equipment, and support fund adjustments.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in general rate proceeding and audit involving Pioneer Telephone Association, Docket No. 11-PNRT-315-KSF in which I addressed cost study issues, allocation of FTTH equipment, and support fund adjustments.
- Assisted Kansas Corporation Staff in audit involving Golden Belt Telephone Association, Docket No. 10-GNBT-526-KSF in which I addressed cost study issues and support fund adjustments.
- Assisted Kansas Corporation Staff in audit involving United Telephone Association, Docket No. 10-UTAT-525-KSF in which I addressed cost study issues and support fund adjustments.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in general rate proceeding and audit involving Haviland Telephone Company, Inc., Docket No. 10-HVDT-288-KSF in which I addressed cost study issues and support fund adjustments.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in general rate proceeding and audit involving Blue Valley Tele-Communications, Inc., Docket No. 09-BLVT-913-KSF in which I addressed cost study issues, allocation of FTTH equipment, and support fund adjustments.
- Assisted Kansas Corporation Staff in audit involving Twin Valley Telephone Company, Docket No. 09-TVWT-069-KSF in which I addressed cost study issues, allocation of FTTH equipment, and support fund adjustments.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in general rate proceeding and audit involving Mutual Telephone Company, Docket No. 09-MLTL-091-KSF in which I addressed cost study issues and support fund adjustments.
- Assisted Kansas Corporation Staff in audit involving Columbus Telephone Company, Docket No. 08-CBST-400-KSF in which I addressed cost study issues, allocation of FTTH equipment, and support fund adjustments.

- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in general rate proceeding and audit involving Moundridge Telephone Company, Docket No. 08-MRGT-221-KSF in which I addressed cost study issues and support fund adjustments.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in general rate proceeding and audit involving Peoples Telecommunications, LLC, Docket No. 07-PLTT-1289-AUD in which I addressed cost study issues and support fund adjustments.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in general rate proceeding and audit involving Madison Telephone, LLC, Docket No. 07-MDTT-195-AUD in which I addressed cost study issues and support fund adjustments.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in general rate proceeding and audit involving Rainbow Telecommunications Association, Inc., Docket No. 06-RNBT-1322-AUD in which I addressed cost study issues and support fund adjustments.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in general rate proceeding and audit involving Wamego Telecommunications Company, Inc., Docket No. 06-WCTC-1020-AUD in which I addressed cost study issues, allocation of FTTH equipment, and support fund adjustments.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in general rate proceeding and audit involving H&B Communications, Inc., Docket No. 06-H&BT-1007-AUD in which I addressed cost study issues, allocation of FTTH equipment, and support fund adjustments.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in general rate proceeding and audit involving Elkhart Telephone Company, Inc., Docket No. 06-ELKT-365-AUD in which I addressed cost study issues, allocation of FTTH equipment, and support fund adjustments.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in general rate proceeding and audit involving South Central Telephone Association, Inc., Docket No. 05-SCNT-1048-AUD in which I addressed cost study issues and support fund adjustments.
- Prefiled testimony on behalf of the Utah Committee of Consumer Services in general rate case involving Carbon/Emery Telecom, Inc., Docket No. 05-2302-01 in which I addressed cost study issues and depreciation rates.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in general rate proceeding and audit involving Totah Communications, Inc., Docket No. 05-TTHT-895-AUD in which I addressed cost study issues and support fund adjustments.
- Prefiled testimony on behalf of the Maine Office of Public Advocate in Docket No. 2005-155, an investigation of Verizon's alternative form of regulation in which I addressed depreciation calculations.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in general rate proceeding and audit involving Tri-County Telephone Association, Docket No. 05-TRCT-607-KSF in which I addressed cost study issues and support fund adjustments.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in general rate

proceeding and audit involving KanOkla Telephone Association, Inc, Docket No. 05-KOKT-060-AUD in which I addressed cost study issues and support fund adjustments.

- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in general rate proceeding and audit involving Cunningham Telephone, Inc, Docket No. 05-CNHT-020-AUD in which I addressed cost study issues and support fund adjustments.
- Testified on behalf of the Kansas Corporation Commission Staff in general rate proceeding and audit involving United Telephone Association, Inc, Docket No. 04-UTAT-690-AUD in which I addressed cost study issues and support fund adjustments.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in general rate proceeding and audit involving Council Grove Telephone Company, Docket No. 04-CGTT-679-KSF in which I addressed cost study issues and support fund adjustments.
- Testified on behalf of the Kansas Corporation Commission Staff in general rate proceeding and audit involving Golden Belt Telephone Association, Docket No. 04-GNBT-130-AUD in which I addressed cost study issues and support fund adjustments.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in general rate proceeding and audit involving Twin Valley Telephone, Inc., Docket No. 03-TWVT-1031-AUD in which I addressed cost study issues.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in general rate proceeding and audit involving Haviland Telephone Company, Docket No. 03-HVDT-664-RTS in which I addressed cost study issues and support fund adjustments.
- Testified on behalf of the Kansas Corporation Commission Staff in general rate proceeding and audit involving Wheat State Telephone Company, Docket No. 03-WHST-503-AUD, in which I addressed cost study issues and support fund adjustments.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in general rate proceeding and audit involving S&A Telephone Company, Docket No. 03-S&AT-160-AUD, in which I addressed cost study issues.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in a general rate proceeding and audit involving JBN Telephone Company, Docket No. 02-JBNT-846-AUD, in which I addressed cost study issues.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in a general rate proceeding and audit involving Blue Valley Telephone Company, Inc., Docket No. 02-BLVT-377-AUD, in which I addressed cost study issues.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in a general rate proceeding and audit involving S&T Telephone Cooperative Association, Inc., Docket No. 02-S&TT-390-AUD, in which I addressed cost study issues.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in a general rate proceeding and audit involving Craw-Kan Telephone Cooperative, Docket No. 01-CRKT-713-AUD, in which I addressed cost study issues.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in a general rate proceeding and audit involving Sunflower Telephone Company, Inc., Docket No. 01-SFLT-879-AUD, in which I addressed cost study issues.

- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in a general rate proceeding and audit involving Bluestem Telephone Company, Inc., Docket No. 01-BSST-878-AUD, in which I addressed cost study issues.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in a general rate proceeding and audit involving Pioneer Telephone Company, Docket No. 01-PNRT-929-AUD, in which I addressed cost study issues.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in a general rate proceeding and audit involving Southern Kansas Telephone Company, Docket No. 01-SNKT-544-AUD, in which I addressed cost study issues.
- Prefiled testimony on behalf of the Kansas Corporation Commission Staff in a general rate proceeding and audit involving Rural Telephone Company, Docket No. 01-RRLT-518-KSF, in which I addressed cost study issues.
- Testified on behalf of the Government and Consumers Intervenors (GCI) before the Illinois Commerce Commission in an Alternative Regulation case involving Ameritech Illinois, Docket No. 98-0252, in which I addressed cost study issues.

Participated in, but did not testify in, the following proceedings:

- Indiana Cause No. 44992 (Indiana-American Water Company Depreciation Issues)
- Maine Docket No. 2017-00065 (Northern Utilities, Inc. (Unitil) Depreciation Issues)
- Oklahoma Cause No. PUD 201700151 (Public Service Company of Oklahoma Electric Depreciation Rate Issues)
- Massachusetts Case No. D.P.U. 17-005 (Eversource Energy (NSTAR Electric Company and Western Massachusetts Electric Company) Depreciation Issues)
- California Public Utilities Commission Docket No. 16-09-001 (Southern California Edison Company General Rate Proceeding)
- New Jersey BPU Docket No. ER16050428 (Rockland Electric Company General Rate Proceeding)
- DC Formal Case No. 1139 (Potomac Electric Company General Rate Proceeding)
- DC Formal Case No. 1137 (Washington Gas Light General Rate Proceeding)
- New Jersey BPU Docket No. GR15111304 (New Jersey Natural Gas General Rate Proceeding)
- Massachusetts Case No. D.P.U. 15-155 (National Grid (Massachusetts Electric Company/Nantucket Electric Company) Depreciation Issues)
- New Mexico Case No. 15-00261-UT (Public Service Company of New Mexico General Rate Proceeding)
- Alaska Docket No. U-15-089 (College Utilities Corporation and Golden Heart Utilities, Inc. Water and Wastewater Depreciation Issues)
- Maryland Case No. 9355 (Baltimore Gas Electric Depreciation Rate Proceeding)
- Nebraska Application NG-0079 (SourceGas Depreciation Rate Proceeding)
- Maine Docket No. 2013-00168 (Central Maine Power Company General Rate Proceeding)

- New Jersey BPU Docket No. GR13111137 (South Jersey Gas Company General Rate Proceeding)
- Utah Docket No. 13-057-19 (Questar Gas Company Depreciation Rate Proceeding)
- DC Formal Case No. 1103 (Potomac Electric Company General Rate Proceeding)
- New Jersey BPU Docket No. ER12121071 and OAL Docket No. PUC00617-13 (Atlantic City Electric Company General Rate Proceeding)
- Utah Docket No. 13-035-02 (Rocky Mountain Power Depreciation Rate Proceeding)
- Alaska Docket No. U-12-149 (ML&P Depreciation Rate Proceeding)
- DC Formal Case No. 1093 (Washington Gas Light General Rate Proceeding)
- Kansas Docket No. 12-KGSG-835-RTS (Kansas Gas Rate Proceeding)
- Kansas Docket No. 12-KCPE-764-RTS (Kansas City Power & Light General Rate Proceeding)
- Indiana Cause No. 44075 (Indiana Michigan Power Company General Rate Proceeding)
- Kansas Docket No. 12-ATMG-564-RTS (Atmos Energy General Rate Proceeding)
- Maryland Case No. 9286 (Potomac Electric Power Company General Rate Proceeding)
- Maryland Case No. 9285 (Delmarva Power & Light Company General Rate Proceeding)
- Kansas Docket No. 12-WSEE-112-RTS (Westar Energy, Inc. General Rate Proceeding)
- Kansas Docket No. 11-MDWE-609-RTS (Midwest Energy General Rate Proceeding)
- Kansas Docket No. 08-GIMX-1142-GIV (Generic Depreciation Docket)
- New Mexico Case No. 10-00086-UT (Public Service Company of New Mexico General Rate Proceeding)
- Georgia Public Service Commission Docket No. 31647 (Atlanta Gas Light Company Rate Proceeding)
- Kansas Docket No. 10-KCPE-415-RTS (Kansas City Power & Light General Rate Proceeding)
- DC Formal Case No. 1076 (PEPCO General Rate Proceeding)
- Missouri Case No. ER-2010-0036 (AmerenUE Electric Rate Proceeding)
- Michigan Case No. U-15981 (Wisconsin Electric Power Company Depreciation Rate Proceeding)
- Alaska Docket No. U-09-097 (Chugach Electric Association, Inc. Depreciation Rate Proceeding)
- Alaska Docket No. U-09-077 (Homer Electric Association, Inc. Depreciation Rate Proceeding)
- Alaska Docket No. U-09-029 (TDX Sand Point Generating, Inc. Depreciation Rate Proceeding)
- Michigan Case No. U-15778 (SEMCO Energy Gas Company Depreciation Rate Proceeding)
- Michigan Case No. U-15699 (Michigan Consolidated Gas Company Depreciation Rate Proceeding)
- Michigan Case No. U-15629 (Consumers Energy Company Depreciation Rate Proceeding)

- New Mexico Case No. 08-00273-UT (Public Service Company of New Mexico General Rate Proceeding)
- Missouri Case No. ER-2008-0318 (AmerenUE Electric Rate Proceeding)
- Missouri Case No. ER-2008-0093 (Empire District Electric Company General Rate Proceeding)
- Kansas Docket No. 08-MDWE-594-RTS (Midwest Energy General Rate Proceeding)
- Alaska Docket No. U-07-174 (Enstar Natural Gas Company and Alaska Pipeline Company Depreciation Rate Proceeding)
- Alaska Docket No. U-08-004 (Anchorage Water and Wastewater Utility Depreciation Rate Proceeding)
- Kansas Case No. 08-ATMG-280-RTS (Atmos Energy General Rate Proceeding)
- Kansas Case No. 08-SEPE-257-DRS (Sunflower Electric Depreciation Rate Proceeding)
- Maryland Case No. 9103 (WGL Depreciation Rate Proceeding)
- Maryland Case No. 9096 (BGE Depreciation Rate Proceeding)
- Maryland Case No. 9092 (PEPCO General Rate Proceeding)
- Missouri Case No. ER-2007-0002 (AmerenUE Electric Rate Proceeding)
- Maryland Case No. 9062 (Chesapeake Utility Corporation General Rate Proceeding)
- Indiana Cause No. 42959 (Indiana Michigan Power Company Depreciation Rate Case)
- Arizona Docket No. T-0151B-03-0454 (Qwest Renewed Price Regulation Plan)
- Illinois Docket No. 04-0461 (SBC Imputation Requirements)
- Utah Docket No. 04-049-62 (Qwest Price Cap Compliance Filing)
- Utah Docket No. 03-049-49 (Qwest Price Flexibility-Residential)
- Utah Docket No. 03-049-50 (Qwest Price Flexibility-Business)
- Alaska Docket Nos. U-1-83, U-01-85, U-01-87 (General Rate Proceeding)
- Maryland Case No. 8960 (Washington Gas Light Company Depreciation Rate
- Proceeding)
- Pennsylvania Docket Nos. C-200271905 (Access Charge Complaint Proceeding)
- Illinois Docket No. 03-0323 (IL UNE Law Proceeding)
- Illinois Docket No. 02-0864 (SBC UNE Rate Proceeding)
- Pennsylvania Docket Nos. A-310200F0002, A-311350F0002, A-310222F0002, A-310291F0003 (Verizon for Approval of Agreement and Plan of Merger)
- California Docket A.02-01-004 (Kerman General Rate Case)
- Pennsylvania Docket Nos. P-00991649, P-00991648, M-00021596 (Joint Petition for Global Resolution of Telecommunications Proceedings)
- Illinois Docket No. 02-0560 (Verizon Advanced Services Waiver)
- Utah Docket No. 01-2383-01 (Qwest Price Flexibility-Residential)
- Utah Docket No. 02-049-82 (Qwest Price Flexibility-Business)
- Missouri Docket No. TR-2001-65 (Cost of Access Proceeding)
- Kansas Docket No. 02-WLST-210-AUD (Audit and General Rate Proceeding)
- Kansas Docket No. 02-HOMT-209-AUD (Audit and General Rate Proceeding)

- New Mexico Case No. 3223 (Universal service fund proceeding)
- Arizona Docket No. T-00000A-00-0194 (Wholesale cost/UNE proceeding of Qwest)
- Arizona TX 98-00716 (Tax Case of Citizens Telecommunications Company of White Mountain, et. al.)
- Maryland Case No. 8862 (PIC change charge case of Verizon Maryland)
- Maryland Case No. 8745 (Universal Service Proceeding of Verizon-Maryland)
- Arizona Docket No. T-01051B-99-0105 (General rate case of Qwest)
- New Mexico Case No. 3300 (Subsidy case of VALOR)
- New Mexico Case No. 3325 (Subsidy case of Qwest)
- New Mexico Case No. 3008 (General Rate/Depreciation case of USWest)
- Arizona Docket No. T-02724A-00-0595 (Earnings Review of Table Top Telephone Co.)
- Arizona Docket No. T-01051B-97-0689 (Depreciation case of US West)
- Illinois Docket No. 99-0412 (EAS case involving Geneseo Telephone Company)
- Kansas Docket No. 00-UTDT-455-GIT (Universal Service Fund case involving Sprint)
- Kansas Docket No. 98-SWBT-677-GIT (Universal Service Fund case involving SWBT)
- Illinois Docket Nos. 98-0200/98-0537 (Consolidated) (Usage sensitive service of GTE)
- Kansas Docket No.98-SWBT-431-DRS (Depreciation case of SWBT)
- Florida Undocketed Special Project (Fair and Reasonable Rates of GTE, BellSouth, and Sprint)
- Pennsylvania Docket No. A-310125F002 (GTE North Interconnection Proceeding)
- Oklahoma Cause No. PUD 96-0000214 (Public Service of Oklahoma Depreciation Case)
- Hawaii Docket No. 7702 (GTE Hawaiian Tel Interconnection/avoided cost proceeding)
- Washington Docket No. UT-960369 (US West avoided cost proceeding)

Participation in the above proceeding included some or all of the following:

Developing analyses, preparing data requests, analyzing issues, writing draft testimony, preparing data responses, preparing draft questions for cross examination, drafting briefs, and developed various quantitative models.

EDUCATION

Master of Arts in Accounting from the University of Illinois-Springfield, Springfield, Illinois.

12 hours of Business and Management classes at Benedictine University-Springfield College in Illinois, Springfield, Illinois.

27 hours of Graduate Studies in Mathematics at Illinois State University, Normal, Illinois.

Bachelor of Science in Mathematics from Illinois State University, Normal, Illinois.

Completed the Depreciation Fundamentals training course offered by the Society of Depreciation Professionals.

Relevant Coursework:

-Calculus
-Number Theory
-Linear Programming
-Finite Sampling
-Introduction to Micro Economics
-Principles of MIS
-Intermediate Managerial Accounting
-Intermediate Financial Accounting I
-Advanced Financial Accounting
-Accounting Information Systems
-Fraud Forensic Accounting
-Commercial Law
-Advanced Auditing
-Discrete Mathematics
-Mathematical Statistics
-Differential Equations
-Statistics for Business and Economics
-Introduction to Macro Economics
-Introduction to Financial Accounting
-Introduction to Managerial Accounting
-Intermediate Financial Accounting II
-Auditing Concepts/Responsibilities
-Federal Income Tax
-Accounting for Government & Non-Profit
-Advanced Utilities Regulation
-Advanced Corp & Partnership Taxation

National Grid - Electric Plant
Table 1: Summary of Depreciation Rates and Annual Accrual Amounts
As of December 31, 2016

		Current Approved		National Grid Proposed			Division Proposed			
Functional Category	12/31/16 Investment	Accrual Rate	Accrual Amount	Accrual Rate	Accrual Amount	Difference from Current	Accrual Rate	Accrual Amount	Difference from Current	Difference from Company
A	B	C	D	E	F	G	H	I	J	K
Transmission Plant	817,852,942	2.27%	18,588,695	2.89%	23,629,519	5,040,824	2.89%	23,629,519	5,040,824	0
Distribution Plant	1,502,833,925	3.22%	48,401,384	3.20%	48,058,754	(342,630)	3.10%	46,546,468	(1,854,916)	(1,512,286)
General Plant	64,221,447	3.57%	2,295,786	3.39%	2,178,774	(117,012)	3.39%	2,178,774	(117,012)	0
Unrecovered Reserve Adjustment			0		(247,009)	(247,009)		(247,009)	(247,009)	0
Total Depreciable Plant	**2,384,908,314**	**2.91%**	**69,285,865**	**3.09%**	**73,620,038**	**4,334,173**	**3.02%**	**72,107,752**	**2,821,887**	**(1,512,286)**

Note:
Transmission Plant in shown on this Schedule since it was included in National Grid's Schedule NWA-2 summary pages. Transmission Plant is not at issue in this proceeding.

National Grid - Electric Plant
Table 2: Summary of Depreciation Rates and Annual Accrual Amounts
As of December 31, 2016

			Current Approved		National Grid Proposed			Division Proposed			
Account	Description	12/31/16 Investment	Accrual Rate	Accrual Amount	Accrual Rate	Accrual Amount	Difference from Current	Accrual Rate	Accrual Amount	Difference from Current	Difference from Company
	A	B	C	D	E	F	G	H	I	J	K
	TRANSMISSION PLANT										
352.00	Structures and Improvements	5,796,211	1.41%	81,727	0.94%	54,769	(26,958)	0.94%	54,769	(26,958)	0
353.00	Station Equipment	292,202,561	1.90%	5,551,849	2.43%	7,094,446	1,542,597	2.43%	7,094,446	1,542,597	0
354.00	Towers and Fixtures	1,554,741	0.00%	0	7.44%	115,672	115,672	7.44%	115,672	115,672	0
355.00	Poles and Fixtures	337,856,717	2.60%	8,784,275	3.13%	10,561,779	1,777,504	3.13%	10,561,779	1,777,504	0
356.00	Overhead Conductors and Devices	146,743,782	2.29%	3,360,433	3.60%	5,277,138	1,916,705	3.60%	5,277,138	1,916,705	0
357.00	Underground Conduit	4,830,086	2.15%	103,847	0.92%	44,512	(59,335)	0.92%	44,512	(59,335)	0
358.00	Underground Conductors and Devices	28,376,661	2.47%	700,904	1.68%	477,146	(223,758)	1.68%	477,146	(223,758)	0
359.00	Roads and Trails	492,182	1.15%	5,660	0.82%	4,057	(1,603)	0.82%	4,057	(1,603)	0
	TOTAL TRANSMISSION PLANT	**817,852,942**	**2.27%**	**18,588,695**	**2.89%**	**23,629,519**	**5,040,824**	**2.89%**	**23,629,519**	**5,040,824**	**0**
	DISTRIBUTION PLANT										
	Distribution Plant										
361.00	Structures and Improvements	10,159,765	2.27%	230,627	1.36%	138,588	(92,039)	1.36%	138,588	(92,039)	0
362.00	Station Equipment	235,561,831	1.97%	4,640,568	2.19%	5,148,598	508,030	2.19%	5,148,598	508,030	0
362.55	Station Equipment - Energy Management System	649,960	1.97%	12,804	6.70%	43,528	30,724	6.70%	43,528	30,724	0
364.00	Poles, Towers, and Fixtures	233,158,953	3.58%	8,347,091	4.27%	9,954,466	1,607,375	4.27%	9,954,466	1,607,375	0
365.00	Overhead Conductors and Devices	303,496,088	3.20%	9,711,875	2.65%	8,032,325	(1,679,550)	2.65%	8,032,325	(1,679,550)	0
366.10	Underground Manholes	23,517,194	1.88%	442,123	1.33%	313,505	(128,618)	1.33%	313,505	(128,618)	0
366.20	Underground Conduit	48,770,764	1.88%	916,890	1.55%	755,438	(161,452)	1.55%	755,438	(161,452)	0
367.10	Underground Conductors and Devices	169,982,454	3.43%	5,830,398	3.42%	5,814,523	(15,875)	3.42%	5,814,523	(15,875)	0
368.10	Line Transformers - Stations	10,730,144	3.78%	405,599	3.33%	357,385	(48,214)	2.19%	235,182	(170,417)	(122,203)
368.20	Line Transformers - Bare Cost	100,521,675	4.01%	4,030,919	3.54%	3,560,040	(470,879)	2.73%	2,739,622	(1,291,297)	(820,418)
368.30	Line Transformers - Install Cost	77,299,715	4.05%	3,130,638	3.59%	2,774,898	(355,740)	2.85%	2,205,234	(925,404)	(569,664)
369.10	Overhead Services	80,498,717	3.44%	2,769,156	5.04%	4,053,214	1,284,058	5.04%	4,053,214	1,284,058	0
369.20	Underground Services	22,670,052	3.20%	725,442	4.87%	1,103,631	378,189	4.87%	1,103,631	378,189	0
370.10	Meters - Bare Cost - Domestic	26,720,549	5.19%	1,386,796	5.61%	1,498,924	112,128	5.61%	1,498,924	112,128	0
370.20	Meters - Install Cost - Domestic	9,862,222	5.29%	521,712	5.81%	573,035	51,323	5.81%	573,035	51,323	0
370.30	Meters - Bare Cost - Large	11,250,650	5.26%	591,784	5.69%	640,381	48,597	5.69%	640,381	48,597	0
370.35	Meters - Install Cost - Large	9,087,750	4.90%	445,300	5.13%	466,076	20,776	5.13%	466,076	20,776	0
371.00	Installations on Customers' Premises	119,825	3.68%	4,410	3.61%	4,328	(82)	3.61%	4,328	(82)	0
373.10	Street Lighting and Signal Systems - Overhead	21,358,803	5.64%	1,204,636	1.46%	310,927	(893,709)	1.46%	310,927	(893,709)	0

National Grid - Electric Plant
Table 2: Summary of Depreciation Rates and Annual Accrual Amounts
As of December 31, 2016

			Current Approved		National Grid Proposed			Division Proposed			
Account	Description	12/31/16 Investment	Accrual Rate	Accrual Amount	Accrual Rate	Accrual Amount	Difference from Current	Accrual Rate	Accrual Amount	Difference from Current	Difference from Company
	A	B	C	D	E	F	G	H	I	J	K
373.20	Street Lighting and Signal Systems - Underground	15,790,537	5.65%	892,165	1.52%	239,825	(652,340)	1.52%	239,825	(652,340)	0
	Subtotal Distribution Plant	*1,411,207,645*	*3.28%*	*46,240,933*	*3.24%*	*45,783,635*	*(457,298)*	*3.14%*	*44,271,349*	*(1,969,584)*	*(1,512,286)*
	Distribution Plant - Block Island Transmission System										
362.00	Station Equipment	17,910,357	1.90%	340,297	2.32%	414,800	74,503	2.32%	414,800	74,503	0
365.00	Overhead Conductors and Devices	349,853	2.29%	8,012	3.02%	10,552	2,540	3.02%	10,552	2,540	0
367.10	Underground Conductors and Devices	73,366,070	2.47%	1,812,142	2.52%	1,849,767	37,625	2.52%	1,849,767	37,625	0
	Subtotal Block Island Transmission System	*91,626,280*	*2.36%*	*2,160,451*	*2.48%*	*2,275,119*	*114,668*	*2.48%*	*2,275,119*	*114,668*	*0*
	TOTAL DISTRIBUTION PLANT	**1,502,833,925**	**3.22%**	**48,401,384**	**3.20%**	**48,058,754**	**(342,630)**	**3.10%**	**46,546,468**	**(1,854,916)**	**(1,512,286)**
	GENERAL PLANT										
	Depreciable										
390.00	Structures and Improvements	37,727,316	2.24%	845,092	2.28%	858,385	13,293	2.28%	858,385	13,293	0
397.10	Communication Equipment - Site Specific	2,689,844	4.66%	125,347	3.90%	104,879	(20,468)	3.90%	104,879	(20,468)	0
	Total Depreciable	*40,417,160*	*2.40%*	*970,439*	*2.38%*	*963,264*	*(7,175)*	*2.38%*	*963,264*	*(7,175)*	*0*
	Amortized										
391.00	Office Furniture and Equipment										
	Fully Accrued	35,491	1.37%	486	0.00%	0	(486)	0.00%	0	(486)	0
	Amortized	477,469	1.37%	6,541	6.67%	31,830	25,289	6.67%	31,830	25,289	0
	Total Office Furniture and Equipment	512,960	1.37%	7,027	6.21%	31,830	24,803	6.21%	31,830	24,803	0
393.00	Stores Equipment	108,185	2.67%	2,889	5.00%	5,410	2,521	5.00%	5,410	2,521	0
394.00	Tools, Shop, and Garage Equipment	2,332,629	4.97%	115,932	5.00%	116,593	661	5.00%	116,593	661	0
395.00	Laboratory Equipment										
	Fully Accrued	333,809	4.26%	14,220	0.00%	0	(14,220)	0.00%	0	(14,220)	0
	Amortized	1,420,854	4.26%	60,528	6.67%	94,722	34,194	6.67%	94,722	34,194	0

National Grid - Electric Plant
Table 2: Summary of Depreciation Rates and Annual Accrual Amounts
As of December 31, 2016

			Current Approved		National Grid Proposed			Division Proposed			
Account	Description	12/31/16 Investment	Accrual Rate	Accrual Amount	Accrual Rate	Accrual Amount	Difference from Current	Accrual Rate	Accrual Amount	Difference from Current	Difference from Company
	A	B	C	D	E	F	G	H	I	J	K
	Total Laboratory Equipment	1,754,664	4.26%	74,748	5.40%	94,722	19,974	5.40%	94,722	19,974	0
397.00	Communication Equipment	18,366,252	6.01%	1,103,812	5.00%	918,314	(185,498)	5.00%	918,314	(185,498)	0
398.00	Miscellaneous Equipment	729,599	2.87%	20,939	6.67%	48,641	27,702	6.67%	48,641	27,702	0
	Total Amortized	*23,804,287*	*5.57%*	*1,325,347*	*5.11%*	*1,215,510*	*(109,837)*	*5.11%*	*1,215,510*	*(109,837)*	*0*
	TOTAL GENERAL PLANT	**64,221,447**	**3.57%**	**2,295,786**	**3.39%**	**2,178,774**	**(117,012)**	**3.39%**	**2,178,774**	**(117,012)**	**0**
	TOTAL DEPRECIABLE PLANT	**2,384,908,314**	**2.91%**	**69,285,865**	**3.10%**	**73,867,047**	**4,581,182**	**3.03%**	**72,354,761**	**3,068,896**	**(1,512,286)**
	UNRECOVERED RESERVE ADJUSTMENT										
391.00	Office Furniture and Equipment					44,292	44,292		44,292	44,292	0
393.00	Stores Equipment					11,066	11,066		11,066	11,066	0
394.00	Tools, Shop, and Garage Equipment					73,680	73,680		73,680	73,680	0
395.00	Laboratory Equipment					88,904	88,904		88,904	88,904	0
397.00	Communication Equipment					(497,168)	(497,168)		(497,168)	(497,168)	0
398.00	Miscellaneous Equipment					32,217	32,217		32,217	32,217	0
	TOTAL UNRECOVERED RESERVE ADJUSTMENT		**0.00%**	**0**	**0.00%**	**(247,009)**	**(247,009)**	**0.00%**	**(247,009)**	**(247,009)**	**0**
	NONDEPRECIABLE PLANT										
303.00	Miscellaneous Intangible Plant	440,739									
330.00	Land and Land Rights	6,989									
331.00	Structures and Improvements	1,993,757									
332.00	Reservoirs, Dams, and Waterways	1,125,689									
350.00	Land and Land Rights	21,653,791									
359.10	Asset Retirement Obligation	67,114									
360.00	Land and Land Rights	15,466,147									
360.90	Land and Land Rights - Block Island Transmission System	364,996									
374.00	Asset Retirement Obligation	265,214									
389.00	Land and Land Rights	975,638									
399.00	Other Tangible Property	16,065									
399.00	Asset Retirement Obligation	391,601									

National Grid - Electric Plant
Table 2: Summary of Depreciation Rates and Annual Accrual Amounts
As of December 31, 2016

			Current Approved		National Grid Proposed			Division Proposed			
Account	Description	12/31/16 Investment	Accrual Rate	Accrual Amount	Accrual Rate	Accrual Amount	Difference from Current	Accrual Rate	Accrual Amount	Difference from Current	Difference from Company
	A	B	C	D	E	F	G	H	I	J	K
	TOTAL NONDEPRECIABLE PLANT	**42,767,739**	**0.00%**	**0**	**0.00%**	**0**	**0**	**0.00%**	**0**	**0**	**0**
	TOTAL ELECTRIC PLANT	**2,427,676,053**		**69,285,865**		**73,620,038**	**4,334,173**		**72,107,752**	**2,821,887**	**(1,512,286)**

Note:
Transmission Plant in shown on this Schedule since it was included in National Grid's Schedule NWA-2 summary pages. Transmission Plant is not at issue in this proceeding.

National Grid - Electric Plant
Table 3: Calculation of Depreciation Rates
As of December 31, 2016

Account	Description	12/31/16 Investment	12/31/16 Book Reserve	Percent Reserve	Future Net Salvage Percent	Net Plant to be Recovered	Remaining Life	Total Annual Rate	Total Annual Accrual
	A	B	C	D=C/B	E	F	G	H	I
	TRANSMISSION PLANT								
352.00	Structures and Improvements	5,796,211	3,469,518	59.86%	-10%	2,906,314	53.1	0.94%	54,733
353.00	Station Equipment	292,202,561	35,573,636	12.17%	-15%	300,459,309	42.4	2.43%	7,086,304
354.00	Towers and Fixtures	1,554,741	470,791	30.28%	-50%	1,861,321	16.1	7.44%	115,610
355.00	Poles and Fixtures	337,856,717	32,144,568	9.51%	-50%	474,640,508	44.9	3.13%	10,571,058
356.00	Overhead Conductors and Devices	146,743,782	5,154,671	3.51%	-50%	214,961,002	40.7	3.60%	5,281,597
357.00	Underground Conduit	4,830,086	3,148,778	65.19%	0%	1,681,308	37.8	0.92%	44,479
358.00	Underground Conductors and Devices	28,376,661	17,027,484	60.01%	-10%	14,186,843	29.7	1.68%	477,671
359.00	Roads and Trails	492,182	423,791	86.10%	0%	68,391	16.9	0.82%	4,047
	TOTAL TRANSMISSION PLANT	**817,852,942**	**97,413,237**	**11.91%**	**-35%**	**1,010,764,996**	**42.8**	**2.89%**	**23,635,500**
	DISTRIBUTION PLANT								
	Distribution Plant								
361.00	Structures and Improvements	10,159,765	4,999,365	49.21%	-10%	6,176,377	44.6	1.36%	138,484
362.00	Station Equipment	235,561,831	49,293,708	20.93%	-15%	221,602,398	43.0	2.19%	5,153,544
362.55	Station Equipment - Energy Management System	649,960	19,494	3.00%	0%	630,466	14.5	6.69%	43,480
364.00	Poles, Towers, and Fixtures	233,158,953	116,244,182	49.86%	-75%	291,783,985	29.3	4.27%	9,958,498
365.00	Overhead Conductors and Devices	303,496,088	126,043,270	41.53%	-30%	268,501,644	33.4	2.65%	8,038,971
366.10	Underground Manholes	23,517,194	12,944,378	55.04%	-10%	12,924,535	41.2	1.33%	313,702
366.20	Underground Conduit	48,770,764	20,265,234	41.55%	-10%	33,382,606	44.2	1.55%	755,263
367.10	Underground Conductors and Devices	169,982,454	65,872,043	38.75%	-40%	172,103,392	29.6	3.42%	5,814,304
368.10	Line Transformers - Stations	10,730,144	9,833,509	91.64%	-30%	4,115,678	17.5	2.19%	235,182
368.20	Line Transformers - Bare Cost	100,521,675	64,105,372	63.77%	-30%	66,572,806	24.3	2.73%	2,739,622
368.30	Line Transformers - Install Cost	77,299,715	40,948,317	52.97%	-30%	59,541,312	27.0	2.85%	2,205,234
369.10	Overhead Services	80,498,717	33,115,344	41.14%	-100%	127,882,091	31.6	5.03%	4,046,902
369.20	Underground Services	22,670,052	7,836,630	34.57%	-100%	37,503,473	34.0	4.87%	1,103,043

National Grid - Electric Plant
Table 3: Calculation of Depreciation Rates
As of December 31, 2016

Account	Description	12/31/16 Investment	12/31/16 Book Reserve	Percent Reserve	Future Net Salvage Percent	Net Plant to be Recovered	Remaining Life	Total Annual Rate	Total Annual Accrual
	A	B	C	D=C/B	E	F	G	H	I
370.10	Meters - Bare Cost - Domestic	26,720,549	21,180,090	79.27%	-25%	12,220,596	8.2	5.58%	1,490,317
370.20	Meters - Install Cost - Domestic	9,862,222	5,443,834	55.20%	-25%	6,883,943	12.0	5.82%	573,662
370.30	Meters - Bare Cost - Large	11,250,650	9,450,502	84.00%	-25%	4,612,810	7.2	5.69%	640,668
370.35	Meters - Install Cost - Large	9,087,750	9,479,381	104.31%	-25%	1,880,306	4.0	5.17%	470,077
371.00	Installations on Customers' Premises	119,825	7,301	6.09%	-10%	124,506	28.8	3.61%	4,323
373.10	Street Lighting and Signal Systems - Overhead	21,358,803	19,960,411	93.45%	-30%	7,806,033	25.1	1.46%	310,997
373.20	Street Lighting and Signal Systems - Underground	15,790,537	14,655,920	92.81%	-30%	5,871,778	24.5	1.52%	239,664
	Subtotal Distribution Plant	*1,411,207,645*	*631,698,285*	*44.76%*	*-40%*	*1,342,120,735*	*30.3*	*3.14%*	*44,275,936*
	Distribution Plant - Block Island Transmission System								
362.00	Station Equipment	17,910,357	60,138	0.34%	-15%	20,536,772	49.5	2.32%	414,884
365.00	Overhead Conductors and Devices	349,853	1,516	0.43%	-50%	523,264	49.6	3.02%	10,550
367.10	Underground Conductors and Devices	73,366,070	281,794	0.38%	0%	73,084,276	39.5	2.52%	1,850,235
	Subtotal Block Island Transmission System	*91,626,280*	*343,448*	*0.37%*	*-3%*	*94,144,312*	*41.4*	*2.48%*	*2,275,669*
	TOTAL DISTRIBUTION PLANT	**1,502,833,925**	**632,041,733**	**42.06%**	**-38%**	**1,436,265,047**	**30.9**	**3.10%**	**46,551,605**
	GENERAL PLANT								
	Depreciable								
390.00	Structures and Improvements	37,727,316	9,935,169	26.33%	-5%	29,678,513	34.6	2.27%	857,760
397.10	Communication Equipment - Site Specific	2,689,844	791,063	29.41%	-5%	2,033,273	19.4	3.90%	104,808
	Total Depreciable	*40,417,160*	*10,726,232*	*26.54%*	*-5%*	*31,711,786*	*32.9*	*2.38%*	*962,568*
	Amortized								

National Grid - Electric Plant
Table 3: Calculation of Depreciation Rates
As of December 31, 2016

Account	Description	12/31/16 Investment	12/31/16 Book Reserve	Percent Reserve	Future Net Salvage Percent	Net Plant to be Recovered	Remaining Life	Total Annual Rate	Total Annual Accrual
	A	B	C	D=C/B	E	F	G	H	I
391.00	Office Furniture and Equipment								
	Fully Accrued	35,491	35,491	100.00%	0%	0	0.0	0.00%	0
	Amortized	477,469	177,375	37.15%	0%	300,094	9.4	6.69%	31,925
	Total Office Furniture and Equipment	512,960	212,866	41.50%	0%	300,094	9.4	6.22%	31,925
393.00	Stores Equipment	108,185	88,750	82.04%	0%	19,435	3.6	4.99%	5,399
394.00	Tools, Shop, and Garage Equipment	2,332,629	985,100	42.23%	0%	1,347,529	11.6	4.98%	116,166
395.00	Laboratory Equipment								
	Fully Accrued	333,809	333,809	100.00%	0%	0	0.0	0.00%	0
	Amortized	1,420,854	743,350	52.32%	0%	677,504	7.2	6.62%	94,098
	Total Laboratory Equipment	1,754,664	1,077,159	61.39%	0%	677,505	7.2	5.36%	94,098
397.00	Communication Equipment	18,366,252	14,454,950	78.70%	0%	3,911,302	4.3	4.95%	909,605
398.00	Miscellaneous Equipment	729,599	161,790	22.18%	0%	567,809	11.7	6.65%	48,531
	Total Amortized	*23,804,287*	*16,980,615*	*71.33%*	*0%*	*6,823,672*	*5.7*	*5.07%*	*1,205,723*
	TOTAL GENERAL PLANT	**64,221,447**	**27,706,847**	**43.14%**	**-3%**	**38,535,458**	**17.8**	**3.38%**	**2,168,292**
	TOTAL DEPRECIABLE PLANT	**2,384,908,314**	**757,161,817**	**31.75%**	**-36%**	**2,485,565,502**	**34.4**	**3.03%**	**72,355,396**
	UNRECOVERED RESERVE ADJUSTMENT								
391.00	Office Furniture and Equipment		(221,462)			221,462	5.0		44,292
393.00	Stores Equipment		(55,330)			55,330	5.0		11,066
394.00	Tools, Shop, and Garage Equipment		(368,400)			368,400	5.0		73,680
395.00	Laboratory Equipment		(444,521)			444,521	5.0		88,904
397.00	Communication Equipment		2,485,838			(2,485,838)	5.0		(497,168)

National Grid - Electric Plant
Table 3: Calculation of Depreciation Rates
As of December 31, 2016

Account	Description	12/31/16 Investment	12/31/16 Book Reserve	Percent Reserve	Future Net Salvage Percent	Net Plant to be Recovered	Remaining Life	Total Annual Rate	Total Annual Accrual
	A	B	C	D=C/B	E	F	G	H	I
398.00	Miscellaneous Equipment		(161,084)			161,084	5.0		32,217
	TOTAL UNRECOVERED RESERVE ADJUSTMENT		**1,235,041**			**(1,235,041)**			**(247,008)**
	NONDEPRECIABLE PLANT								
303.00	Miscellaneous Intangible Plant	440,739	60,339						
330.00	Land and Land Rights	6,989	0						
331.00	Structures and Improvements	1,993,757	1,993,757						
332.00	Reservoirs, Dams, and Waterways	1,125,689	1,125,689						
350.00	Land and Land Rights	21,653,791	(411,776)						
359.10	Asset Retirement Obligation	67,114	38,264						
360.00	Land and Land Rights	15,466,147	(23,760)						
360.90	Land and Land Rights - Block Island Transmission Syste	364,996	0						
374.00	Asset Retirement Obligation	265,214	197,370						
389.00	Land and Land Rights	975,638	0						
399.00	Other Tangible Property	16,065	1,304						
399.00	Asset Retirement Obligation	391,601	380,110						
	TOTAL NONDEPRECIABLE PLANT	**42,767,739**	**3,361,297**			**0**			**0**
	TOTAL ELECTRIC PLANT	**2,427,676,053**	**761,758,155**			**2,484,330,461**			**72,108,388**

National Grid - Electric Plant
Table 4: Current and Proposed Parameters
As of December 31, 2016

		Current				National Grid Proposed					Division Proposed				
Account	Description	AYFR	Proj Life	Iowa Curve Shape	Future Net Salvage	AYFR	Proj Life	Iowa Curve Shape	Avg Rem Life	Future Net Salvage	AYFR	Proj Life	Iowa Curve Shape	Avg Rem Life	Future Net Salvage
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
	TRANSMISSION PLANT														
352.00	Structures and Improvements		55	S4	-20%		60	S1	53.1	-10%		60	S1	53.1	-10%
353.00	Station Equipment		60	L1	-20%		50	S0	42.4	-15%		50	S0	42.4	-15%
354.00	Towers and Fixtures		50	R4	-20%		60	R4	16.1	-50%		60	R4	16.1	-50%
355.00	Poles and Fixtures		45	S2	-20%		50	S0.5	44.9	-50%		50	S0.5	44.9	-50%
356.00	Overhead Conductors and Devices		50	S1.5	-20%		50	R1.5	40.7	-50%		50	R1.5	40.7	-50%
357.00	Underground Conduit		50	R4	-20%		60	R4	37.8	0%		60	R4	37.8	0%
358.00	Underground Conductors and Devices		45	L2	-20%		50	R3	29.7	-10%		50	R3	29.7	-10%
359.00	Roads and Trails		60	R5	-20%		60	R4	16.9	0%		60	R4	16.9	0%
	TOTAL TRANSMISSION PLANT														
	DISTRIBUTION PLANT														
	Distribution Plant														
361.00	Structures and Improvements		55	R4	-30%		60	R2	44.6	-10%		60	R2	44.6	-10%
362.00	Station Equipment		65	L0.5	-30%		55	S0	43.0	-15%		55	S0	43.0	-15%
362.55	Station Equipment - Energy Management System		65	L0.5	-30%		15	S2.5	14.5	0%		15	S2.5	14.5	0%
364.00	Poles, Towers, and Fixtures		38	S2	-30%		45	S1.5	29.3	-75%		45	S1.5	29.3	-75%
365.00	Overhead Conductors and Devices		40	L1.5	-30%		45	R1	33.4	-30%		45	R1	33.4	-30%
366.10	Underground Manholes		60	S4	-30%		60	S4	41.2	-10%		60	S4	41.2	-10%
366.20	Underground Conduit		60	S4	-30%		60	S4	44.2	-10%		60	S4	44.2	-10%
367.10	Underground Conductors and Devices		37	S0.5	-30%		40	R1.5	29.6	-40%		40	R1.5	29.6	-40%
368.10	Line Transformers - Stations		31	S1	-30%		40	S2.5	17.5	-50%		40	S2.5	17.5	-30%
368.20	Line Transformers - Bare Cost		31	S1	-30%		40	S2.5	24.3	-50%		40	S2.5	24.3	-30%
368.30	Line Transformers - Install Cost		31	S1	-30%		40	S2.5	27.0	-50%		40	S2.5	27.0	-30%

National Grid - Electric Plant
Table 4: Current and Proposed Parameters
As of December 31, 2016

		Current				National Grid Proposed					Division Proposed				
Account	Description	AYFR	Proj Life	Iowa Curve Shape	Future Net Salvage	AYFR	Proj Life	Iowa Curve Shape	Avg Rem Life	Future Net Salvage	AYFR	Proj Life	Iowa Curve Shape	Avg Rem Life	Future Net Salvage
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
369.10	Overhead Services		40	S4	-30%		50	R3	31.6	-100%		50	R3	31.6	-100%
369.20	Underground Services		40	S4	-30%		50	R3	34.0	-100%		50	R3	34.0	-100%
370.10	Meters - Bare Cost - Domestic		23	R2	-30%		20	S2	8.2	-25%		20	S2	8.2	-25%
370.20	Meters - Install Cost - Domestic		23	R2	-30%		20	S2	12.0	-25%		20	S2	12.0	-25%
370.30	Meters - Bare Cost - Large		23	R2	-30%		20	S2	7.2	-25%		20	S2	7.2	-25%
370.35	Meters - Install Cost - Large		23	R2	-30%		20	S2	4.0	-25%		20	S2	4.0	-25%
371.00	Installations on Customers' Premises		35	L0	-30%		30	R1.5	28.8	-10%		30	R1.5	28.8	-10%
373.10	Street Lighting and Signal Systems - Overhead		20	L2	-30%		30	R1.5	25.1	-30%		30	R1.5	25.1	-30%
373.20	Street Lighting and Signal Systems - Underground		20	L2	-30%		30	R1.5	24.5	-30%		30	R1.5	24.5	-30%
	Subtotal Distribution Plant														
	Distribution Plant - Block Island Transmission System														
362.00	Station Equipment		60	L1	-20%		55	S0	49.5	-15%		55	S0	49.5	-15%
365.00	Overhead Conductors and Devices		50	S1.5	-20%		50	R1.5	49.6	-50%		50	R1.5	49.6	-50%
367.10	Underground Conductors and Devices		45	L2	-20%		40	R3	39.5	0%		40	R3	39.5	0%
	Subtotal Block Island Transmission System														
	TOTAL DISTRIBUTION PLANT														
	GENERAL PLANT														
	Depreciable														
390.00	Structures and Improvements		50	L1	-5%		50	R2	34.6	-5%		50	R2	34.6	-5%
397.10	Communication Equipment - Site Specific		25	S3	-5%		25	S3	19.4	-5%		25	S3	19.4	-5%

National Grid - Electric Plant
Table 4: Current and Proposed Parameters
As of December 31, 2016

		Current				National Grid Proposed					Division Proposed				
Account	Description	AYFR	Proj Life	Iowa Curve Shape	Future Net Salvage	AYFR	Proj Life	Iowa Curve Shape	Avg Rem Life	Future Net Salvage	AYFR	Proj Life	Iowa Curve Shape	Avg Rem Life	Future Net Salvage
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
	Total Depreciable														
	Amortized														
391.00	Office Furniture and Equipment														
	Fully Accrued		15	SQ	0%		Fully Accrued		0.0	0%		Fully Accrued		0.0	0%
	Amortized		15	SQ	0%		15	SQ	9.4	0%		15	SQ	9.4	0%
	Total Office Furniture and Equipment														
393.00	Stores Equipment		15	SQ	0%		20	SQ	3.6	0%		20	SQ	3.6	0%
394.00	Tools, Shop, and Garage Equipment		15	SQ	0%		20	SQ	11.6	0%		20	SQ	11.6	0%
395.00	Laboratory Equipment														
	Fully Accrued		15	SQ	0%		Fully Accrued		0.0	0%		Fully Accrued		0.0	0%
	Amortized		15	SQ	0%		15	SQ	7.2	0%		15	SQ	7.2	0%
	Total Laboratory Equipment														
397.00	Communication Equipment		15	SQ	0%		20	SQ	4.3	0%		20	SQ	4.3	0%
398.00	Miscellaneous Equipment		15	SQ	0%		15	SQ	11.7	0%		15	SQ	11.7	0%
	Total Amortized														
	TOTAL GENERAL PLANT														
	TOTAL DEPRECIABLE PLANT														

National Grid - Natural Gas Plant
Table 1: Summary of Depreciation Rates and Annual Accrual Amounts
As of December 31, 2016

		Current Approved		National Grid Proposed			Division Proposed			
Functional Category	12/31/16 Investment	Accrual Rate	Accrual Amount	Accrual Rate	Accrual Amount	Difference from Current	Accrual Rate	Accrual Amount	Difference from Current	Difference from Company
A	B	C	D	E	F	G	H	I	J	K
Production Plant	3,973,098	-10.48%	(416,220)	12.45%	494,709	910,929	12.45%	494,709	910,929	0
Other Storage Plant	21,962,191	2.13%	466,972	2.29%	503,941	36,969	2.29%	503,941	36,969	0
Distribution Plant	1,017,764,453	3.25%	33,088,866	3.12%	31,782,890	(1,305,976)	2.79%	28,423,601	(4,665,265)	(3,359,289)
General Plant	14,206,641	3.31%	469,593	4.01%	569,708	100,115	4.01%	569,708	100,115	0
Unrecovered Reserve Adjustment					186,500	186,500		186,500	186,500	0
Total Depreciable Plant	**1,057,906,383**	**3.18%**	**33,609,211**	**3.17%**	**33,537,748**	**(71,463)**	**2.85%**	**30,178,459**	**(3,430,752)**	**(3,359,289)**

National Grid - Natural Gas Plant
Table 2: Summary of Depreciation Rates and Annual Accrual Amounts
As of December 31, 2016

Account	Description	12/31/16 Investment	Current Approved Accrual Rate	Current Approved Accrual Amount	National Grid Proposed Accrual Rate	National Grid Proposed Accrual Amount	National Grid Proposed Difference from Current	Division Proposed Accrual Rate	Division Proposed Accrual Amount	Division Proposed Difference from Current	Difference from Company
	A	B	C	D	E	F	G	H	I	J	K
	PRODUCTION PLANT										
305.00	Structures and Improvements	1,614,526	-5.04%	(81,372)	15.05%	243,026	324,398	15.05%	243,026	324,398	0
307.00	Other Power Equipment	46,159	-11.41%	(5,267)	7.16%	3,303	8,570	7.16%	3,303	8,570	0
311.00	Liquefied Petroleum Gas Equipment	1,990,377	-15.02%	(298,955)	11.40%	226,828	525,783	11.40%	226,828	525,783	0
320.00	Other Equipment	322,036	-9.51%	(30,626)	6.69%	21,552	52,178	6.69%	21,552	52,178	0
	TOTAL PRODUCTION PLANT	**3,973,098**	**-10.48%**	**(416,220)**	**12.45%**	**494,709**	**910,929**	**12.45%**	**494,709**	**910,929**	**0**
	OTHER STORAGE PLANT										
361.00	Overhead Conductors and Devices	3,385,049	1.89%	63,977	0.99%	33,540	(30,437)	0.99%	33,540	(30,437)	0
362.00	Underground Conduit	4,685,932	0.27%	12,652	0.04%	1,993	(10,659)	0.04%	1,993	(10,659)	0
363.00	Underground Conductors and Devices	13,891,210	2.81%	390,343	3.37%	468,408	78,065	3.37%	468,408	78,065	0
	TOTAL OTHER STORAGE PLANT	**21,962,191**	**2.13%**	**466,972**	**2.29%**	**503,941**	**36,969**	**2.29%**	**503,941**	**36,969**	**0**
	DISTRIBUTION PLANT										
	Depreciable										
375.00	Structures and Improvements	10,642,632	2.89%	307,572	1.15%	122,903	(184,669)	1.15%	122,903	(184,669)	0
376.10	Mains - Steel and Other	114,931,286	2.92%	3,355,994	3.61%	4,147,586	791,592	3.00%	3,442,852	86,858	(704,734)
376.12	Mains - Plastic	364,163,800	3.27%	11,908,156	2.89%	10,518,397	(1,389,759)	2.50%	9,119,875	(2,788,281)	(1,398,522)
376.13	Mains - Cast Iron	6,104,510	2.87%	175,199	9.04%	551,900	376,701	7.73%	471,991	296,792	(79,909)
377.00	Compressor Station Equipment	248,656	4.84%	12,035	1.07%	2,658	(9,377)	1.07%	2,658	(9,377)	0
378.00	Measuring and Regulating Station Equipment - General	19,980,349	3.42%	683,328	2.08%	414,742	(268,586)	2.08%	414,742	(268,586)	0
378.55	Measuring and Regulating Station Equipment - RTU	474,108	3.42%	16,215	6.35%	30,099	13,884	6.35%	30,099	13,884	0
379.00	Measuring and Regulating Station Equipment - City Gate	10,088,614	3.48%	351,084	2.22%	224,115	(126,969)	2.22%	224,115	(126,969)	0
380.00	Services	313,836,259	3.26%	10,231,062	3.24%	10,166,721	(64,341)	2.86%	8,990,597	(1,240,465)	(1,176,124)
381.00	Meters	44,206,424	3.73%	1,648,900	1.76%	778,861	(870,039)	1.76%	778,861	(870,039)	0
382.00	Meter Installations	50,668,794	2.11%	1,069,112	3.66%	1,852,835	783,723	3.66%	1,852,835	783,723	0
383.00	House Regulators	937,222	5.53%	51,828	0.67%	6,318	(45,510)	0.67%	6,318	(45,510)	0
384.00	House Regulator Installations	1,216,551	3.74%	45,499	1.56%	18,987	(26,512)	1.56%	18,987	(26,512)	0
385.00	Industrial Measuring and Regulating Station Equipment	540,187	4.99%	26,955	4.18%	22,598	(4,357)	4.18%	22,598	(4,357)	0
386.00	Other Property on Customer Premises	271,765	4.99%	13,561	0.23%	632	(12,929)	0.23%	632	(12,929)	0
387.00	Other Equipment	798,501	4.77%	38,089	2.15%	17,180	(20,909)	2.15%	17,180	(20,909)	0
	Total Depreciable	*939,109,659*	*3.19%*	*29,934,589*	*3.07%*	*28,876,532*	*(1,058,057)*	*2.72%*	*25,517,243*	*(4,417,346)*	*(3,359,289)*

National Grid - Natural Gas Plant
Table 2: Summary of Depreciation Rates and Annual Accrual Amounts
As of December 31, 2016

			Current Approved		National Grid Proposed			Division Proposed			
Account	Description	12/31/16 Investment	Accrual Rate	Accrual Amount	Accrual Rate	Accrual Amount	Difference from Current	Accrual Rate	Accrual Amount	Difference from Current	Difference from Company
	A	B	C	D	E	F	G	H	I	J	K
	Amortized										
376.04	Mains - Steel and Other	4,190	0.00%	0	0.00%	0	0	0.00%	0	0	0
376.17	Mains - Joint Seals	59,046,926	3.33%	1,966,263	4.63%	2,735,967	769,704	4.63%	2,735,967	769,704	0
379.01	Measuring and Regulating Station Equipment - City Gate	1,399,586	0.00%	0	0.00%	0	0	0.00%	0	0	0
381.40	Meters - ERTS	17,838,041	6.66%	1,188,014	0.96%	170,391	(1,017,623)	0.96%	170,391	(1,017,623)	0
385.01	Industrial Measuring and Regulating Station Equipment	255,921	0.00%	0	0.00%	0	0	0.00%	0	0	0
386.02	Other Property on Customer Premises	110,131	0.00%	0	0.00%	0	0	0.00%	0	0	0
	Total Amortized	*78,654,794*	*4.01%*	*3,154,277*	*3.70%*	*2,906,358*	*(247,919)*	*3.70%*	*2,906,358*	*(247,919)*	*0*
	TOTAL DISTRIBUTION PLANT	**1,017,764,453**	**3.25%**	**33,088,866**	**3.12%**	**31,782,890**	**(1,305,976)**	**2.79%**	**28,423,601**	**(4,665,265)**	**(3,359,289)**
	GENERAL PLANT										
	Depreciable										
390.00	Structures and Improvements	6,250,561	2.61%	163,140	3.12%	194,984	31,844	3.12%	194,984	31,844	0
397.30	Communication Equipment - Radio	387,650	10.05%	38,959	5.00%	19,383	(19,576)	5.00%	19,383	(19,576)	0
	Total Depreciable	*6,638,211*	*3.04%*	*202,099*	*3.23%*	*214,367*	*12,268*	*3.23%*	*214,367*	*12,268*	*0*
	Amortized										
391.10	Office Furniture and Equipment	529,584	0.00%	0	6.67%	35,321	35,321	6.67%	35,321	35,321	0
394.00	Tools, Shop, and Garage Equipment										
	Fully Accrued	26,487			0.00%	0		0.00%	0		0
	Amortized	3,989,604			5.00%	199,379		5.00%	199,379		0
	Total Tools, Shop, and Garage Equipment	*4,016,092*	3.79%	152,210	*4.96%*	*199,379*	*47,169*		*199,379*	*47,169*	*0*
395.00	Laboratory Equipment	221,565	5.59%	12,385	6.67%	14,781	2,396	6.67%	14,781	2,396	0
397.42	Communication Equipment	63,481	10.29%	6,532	20.00%	12,698	6,166	20.00%	12,698	6,166	0
398.00	Miscellaneous Equipment										
	Fully Accrued	1,341,386			0.00%	0		0.00%	0		0
	Amortized	1,396,322			6.67%	93,162		6.67%	93,162		0
	Total Miscellaneous Equipment	*2,737,708*	3.52%	96,367	*3.40%*	*93,162*	*(3,205)*		*93,162*	*(3,205)*	*0*

National Grid - Natural Gas Plant
Table 2: Summary of Depreciation Rates and Annual Accrual Amounts
As of December 31, 2016

Account	Description	12/31/16 Investment	Current Approved Accrual Rate	Current Approved Accrual Amount	National Grid Proposed Accrual Rate	National Grid Proposed Accrual Amount	National Grid Proposed Difference from Current	Division Proposed Accrual Rate	Division Proposed Accrual Amount	Division Proposed Difference from Current	Difference from Company
	A	B	C	D	E	F	G	H	I	J	K
	Total Amortized	*7,568,430*	*3.53%*	*267,494*	*4.70%*	*355,341*	*87,847*	*4.70%*	*355,341*	*87,847*	*0*
	TOTAL GENERAL PLANT	**14,206,641**	**3.31%**	**469,593**	**4.01%**	**569,708**	**100,115**	**4.01%**	**569,708**	**100,115**	**0**
	TOTAL DEPRECIABLE PLANT	**1,057,906,383**	**3.18%**	**33,609,211**	**3.15%**	**33,351,248**	**(257,963)**	**2.84%**	**29,991,959**	**(3,617,252)**	**(3,359,289)**
	UNRECOVERED RESERVE ADJUSTMENT										
391.00	Office Furniture and Equipment					(117,713)	(117,713)		(117,713)	(117,713)	0
393.00	Stores Equipment					2,443	2,443		2,443	2,443	0
394.00	Tools, Shop, and Garage Equipment					222,691	222,691		222,691	222,691	0
395.00	Laboratory Equipment					3,052	3,052		3,052	3,052	0
396.00	Power Operated Equipment					788	788		788	788	0
397.30	Communication Equipment-Radio					(128,590)	(128,590)		(128,590)	(128,590)	0
397.42	Communication Equipment					(92,642)	(92,642)		(92,642)	(92,642)	0
398.00	Miscellaneous Equipment					296,472	296,472		296,472	296,472	0
	TOTAL UNRECOVERED RESERVE ADJUSTMENT					**186,500**	**186,500**		**186,500**	**186,500**	**0**
	NONDEPRECIABLE PLANT										
302.00	Franchises and Consents	213,499									
303.00	Miscellaneous Intangible Plant	29,850,371									
304.00	Land and Land Rights	1,443,783									
360.00	Land and Land Rights	261,151									
374.00	Land and Land Rights	956,689									
377.62	Asset Retirement Obligation	299									
388.00	Asset Retirement Obligation	5,736,827									
389.00	Land and Land Rights	285,357									
399.00	Tangible Leased Property	570,221									
399.00	Asset Retirement Obligation	342,146									
	TOTAL NONDEPRECIABLE PLANT	**39,660,344**		**0**		**0**	**0**		**0**	**0**	**0**
	TOTAL NATURAL GAS PLANT	**1,097,566,727**		**33,609,211**		**33,537,748**	**(71,463)**		**30,178,459**	**(3,430,752)**	**(3,359,289)**

National Grid - Natural Gas Plant
Table 3: Calculation of Depreciation Rates
As of December 31, 2016

Account	Description	12/31/16 Investment	12/31/16 Book Reserve	Percent Reserve	Future Net Salvage Percent	Net Plant to be Recovered	Remaining Life	Total Annual Rate	Total Annual Accrual
	A	B	C	D=C/B	E	F	G	H	I
	PRODUCTION PLANT								
305.00	Structures and Improvements	1,614,526	574,432	35.58%	-5%	1,120,820	4.6	15.09%	243,656
307.00	Other Power Equipment	46,159	20,069	43.48%	-5%	28,398	8.6	7.15%	3,302
311.00	Liquefied Petroleum Gas Equipment	1,990,377	613,815	30.84%	-5%	1,476,081	6.5	11.41%	227,089
320.00	Other Equipment	322,036	53,936	16.75%	-5%	284,201	13.2	6.69%	21,530
	TOTAL PRODUCTION PLANT	**3,973,098**	**1,262,252**	**31.77%**	**-5%**	**2,909,500**	**5.9**	**12.47%**	**495,578**
	OTHER STORAGE PLANT								
361.00	Overhead Conductors and Devices	3,385,049	2,397,551	70.83%	-10%	1,326,003	39.5	0.99%	33,570
362.00	Underground Conduit	4,685,932	5,057,403	107.93%	-10%	97,122	48.7	0.04%	1,994
363.00	Underground Conductors and Devices	13,891,210	5,531,259	39.82%	-10%	9,749,071	20.8	3.37%	468,705
	TOTAL OTHER STORAGE PLANT	**21,962,191**	**12,986,214**	**59.13%**	**-10%**	**11,172,197**	**22.2**	**2.30%**	**504,269**
	DISTRIBUTION PLANT								
	Depreciable								
375.00	Structures and Improvements	10,642,632	6,834,388	64.22%	-20%	5,936,771	48.3	1.15%	122,915
376.10	Mains - Steel and Other	114,931,286	59,127,084	51.45%	-50%	113,269,845	32.9	3.00%	3,442,852
376.12	Mains - Plastic	364,163,800	70,188,225	19.27%	-50%	476,057,474	52.2	2.50%	9,119,875
376.13	Mains - Cast Iron	6,104,510	2,076,901	34.02%	-50%	7,079,865	15.0	7.73%	471,991
377.00	Compressor Station Equipment	248,656	222,318	89.41%	-5%	38,771	14.6	1.07%	2,656
378.00	Measuring and Regulating Station Equipment - General	19,980,349	5,457,832	27.32%	-20%	18,518,586	44.7	2.07%	414,286
378.55	Measuring and Regulating Station Equipment - RTU	474,108	66,184	13.96%	0%	407,924	13.6	6.33%	29,994
379.00	Measuring and Regulating Station Equipment - City Gate	10,088,614	3,261,580	32.33%	-20%	8,844,757	39.5	2.22%	223,918
380.00	Services	313,836,259	154,609,724	49.26%	-65%	363,220,104	40.4	2.86%	8,990,597
381.00	Meters	44,206,424	20,980,224	47.46%	-5%	25,436,521	32.7	1.76%	777,875
382.00	Meter Installations	50,668,794	9,940,950	19.62%	-5%	43,261,283	23.3	3.66%	1,856,707

National Grid - Natural Gas Plant
Table 3: Calculation of Depreciation Rates
As of December 31, 2016

Account	Description	12/31/16 Investment	12/31/16 Book Reserve	Percent Reserve	Future Net Salvage Percent	Net Plant to be Recovered	Remaining Life	Total Annual Rate	Total Annual Accrual
	A	B	C	D=C/B	E	F	G	H	I
383.00	House Regulators	937,222	699,340	74.62%	0%	237,882	37.7	0.67%	6,310
384.00	House Regulator Installations	1,216,551	587,599	48.30%	0%	628,951	33.1	1.56%	19,002
385.00	Industrial Measuring and Regulating Station Equipment	540,187	65,350	12.10%	-5%	501,846	22.2	4.18%	22,606
386.00	Other Property on Customer Premises	271,765	277,308	102.04%	-5%	8,046	12.7	0.23%	634
387.00	Other Equipment	798,501	521,164	65.27%	0%	277,337	16.1	2.16%	17,226
	Total Depreciable	*939,109,659*	*334,916,171*	*35.66%*	*-49%*	*1,063,725,965*	*41.7*	*2.72%*	*25,519,443*
	Amortized								
376.04	Mains - Steel and Other	4,190	4,190	100.00%	0%	0	0.0	0.00%	0
376.17	Mains - Joint Seals	59,046,926	9,799,521	16.60%	0%	49,247,404	18.0	4.63%	2,735,967
379.01	Measuring and Regulating Station Equipment - City Gate	1,399,586	1,399,586	100.00%	0%	0	0.0	0.00%	0
381.40	Meters - ERTS	17,838,041	16,164,590	90.62%	0%	1,673,450	9.8	0.96%	170,760
385.01	Industrial Measuring and Regulating Station Equipment	255,921	255,921	100.00%	0%	0	0.0	0.00%	0
386.02	Other Property on Customer Premises	110,131	110,131	100.00%	0%	0	0.0	0.00%	0
	Total Amortized	*78,654,794*	*27,733,939*	*35.26%*	*0%*	*50,920,855*	*17.5*	*3.70%*	*2,906,727*
	TOTAL DISTRIBUTION PLANT	**1,017,764,453**	**362,650,111**	**35.63%**	**-45%**	**1,114,646,820**	**39.2**	**2.79%**	**28,426,170**
	GENERAL PLANT								
	Depreciable								
390.00	Structures and Improvements	6,250,561	427,581	6.84%	-5%	6,135,508	31.5	3.12%	194,778
397.30	Communication Equipment - Radio	387,650	176,492	45.53%	0%	211,158	10.9	5.00%	19,372
	Total Depreciable	*6,638,211*	*604,073*	*9.10%*	*-5%*	*6,346,666*	*29.6*	*3.23%*	*214,150*
	Amortized								

National Grid - Natural Gas Plant
Table 3: Calculation of Depreciation Rates
As of December 31, 2016

Account	Description	12/31/16 Investment	12/31/16 Book Reserve	Percent Reserve	Future Net Salvage Percent	Net Plant to be Recovered	Remaining Life	Total Annual Rate	Total Annual Accrual
	A	B	C	D=C/B	E	F	G	H	I
391.10	Office Furniture and Equipment	529,584	229,800	43.39%	0%	299,784	8.5	6.66%	35,269
394.00	Tools, Shop, and Garage Equipment								
	Fully Accrued	26,487	26,487	100.00%	0%	0	0.0	0.00%	0
	Amortized	3,989,604	1,124,500	28.19%	0%	2,865,104	14.4	4.99%	198,966
	Total Tools, Shop, and Garage Equipment	*4,016,092*	*1,150,987*	*28.66%*	*0%*	*2,865,104*	*14.4*	*4.95%*	*198,966*
395.00	Laboratory Equipment	221,565	156,650	70.70%	0%	64,915	4.4	6.66%	14,753
397.42	Communication Equipment	63,481	31,735	49.99%	0%	31,746	2.5	20.00%	12,699
398.00	Miscellaneous Equipment								
	Fully Accrued	1,341,386	1,341,386	100.00%	0%	0	0.0	0.00%	0
	Amortized	1,396,322	731,500	52.39%	0%	664,822	7.1	6.71%	93,637
	Total Miscellaneous Equipment	*2,737,708*	*2,072,886*	*75.72%*	*0%*	*664,822*	*7.1*	*3.42%*	*93,637*
	Total Amortized	*7,568,430*	*3,642,058*	*48.12%*	*9%*	*3,261,549*	*12.5*	*3.46%*	*261,686*
	TOTAL GENERAL PLANT	**14,206,641**	**4,246,132**	**29.89%**	**-2%**	**10,273,038**	**18.0**	**4.01%**	**569,473**
	TOTAL DEPRECIABLE PLANT	**1,057,906,383**	**381,144,708**	**36.03%**	**-44%**	**1,139,001,554**	**38.0**	**2.84%**	**29,995,491**
	UNRECOVERED RESERVE ADJUSTMENT								
391.00	Office Furniture and Equipment		588,565			(588,565)	5.0		(117,713)
393.00	Stores Equipment		(12,213)			12,213	5.0		2,443
394.00	Tools, Shop, and Garage Equipment		(1,113,455)			1,113,455	5.0		222,691
395.00	Laboratory Equipment		(15,258)			15,258	5.0		3,052
396.00	Power Operated Equipment		(3,938)			3,938	5.0		788
397.30	Communication Equipment-Radio		642,948			(642,948)	5.0		(128,590)
397.42	Communication Equipment		463,211			(463,211)	5.0		(92,642)
398.00	Miscellaneous Equipment		(1,482,359)			1,482,359	5.0		296,472

National Grid - Natural Gas Plant
Table 3: Calculation of Depreciation Rates
As of December 31, 2016

Account	Description	12/31/16 Investment	12/31/16 Book Reserve	Percent Reserve	Future Net Salvage Percent	Net Plant to be Recovered	Remaining Life	Total Annual Rate	Total Annual Accrual
	A	B	C	D=C/B	E	F	G	H	I
	TOTAL UNRECOVERED RESERVE ADJUSTMENT		**(932,499)**			**932,499**			**186,500**
	NONDEPRECIABLE PLANT								
302.00	Franchises and Consents	213,499	0						
303.00	Miscellaneous Intangible Plant	29,850,371	27,130,576						
304.00	Land and Land Rights	1,443,783	0						
360.00	Land and Land Rights	261,151	0						
374.00	Land and Land Rights	956,689	0						
377.62	Asset Retirement Obligation	299	63						
388.00	Asset Retirement Obligation	5,736,827	5,024,222						
389.00	Land and Land Rights	285,357	(246,879)						
399.00	Tangible Leased Property	570,221	0						
399.00	Asset Retirement Obligation	342,146	314,389						
	TOTAL NONDEPRECIABLE PLANT	**39,660,344**	**32,222,371**			**0**			**0**
	TOTAL NATURAL GAS PLANT	**1,097,566,727**	**412,434,580**			**1,139,934,053**			**30,181,991**

National Grid - Natural Gas Plant
Table 4: Current and Proposed Parameters
As of December 31, 2016

		Current				National Grid Proposed					Division Proposed				
Account	Description	AYFR	Proj Life	Iowa Curve Shape	Future Net Salvage	AYFR	Proj Life	Iowa Curve Shape	Avg Rem Life	Future Net Salvage	AYFR	Proj Life	Iowa Curve Shape	Avg Rem Life	Future Net Salvage
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
	PRODUCTION PLANT														
305.00	Structures and Improvements		40	R4	-5%		50	R2.5	4.6	-5%		50	R2.5	4.6	-5%
307.00	Other Power Equipment		30	R1	-5%		40	R1	8.6	-5%		40	R1	8.6	-5%
311.00	Liquefied Petroleum Gas Equipment		25	S3	-5%		30	R2.5	6.5	-5%		30	R2.5	6.5	-5%
320.00	Other Equipment		20	R3	-5%		30	R2	13.2	-5%		30	R2	13.2	-5%
	TOTAL PRODUCTION PLANT														
	OTHER STORAGE PLANT														
361.00	Overhead Conductors and Devices		50	S3	-10%		50	R3	39.5	-10%		50	R3	39.5	-10%
362.00	Underground Conduit		50	R4	-10%		50	R4	48.7	-10%		50	R4	48.7	-10%
363.00	Underground Conductors and Devices		25	R3	-10%		30	R3	20.8	-10%		30	R3	20.8	-10%
	TOTAL OTHER STORAGE PLANT														
	DISTRIBUTION PLANT														
	Depreciable														
375.00	Structures and Improvements		60	R4	-65%		60	R2	48.3	-20%		60	R2	48.3	-20%
376.10	Mains - Steel and Other		60	S3	-65%		60	S3	32.9	-70%		60	S3	32.9	-50%
376.12	Mains - Plastic		50	S3	-65%		60	R3	52.2	-70%		60	R3	52.2	-50%
376.13	Mains - Cast Iron		60	R3	-65%	2034	60	S1	15.0	-70%	2034	60	S1	15.0	-50%
377.00	Compressor Station Equipment		20	L0.5	-65%		25	L1	14.6	-5%		25	L1	14.6	-5%
378.00	Measuring and Regulating Station Equipment - General		45	R2.5	-65%		50	R3	44.7	-20%		50	R3	44.7	-20%
378.55	Measuring and Regulating Station Equipment - RTU		45	R2.5	-65%		15	S2.5	13.6	0%		15	S2.5	13.6	0%
379.00	Measuring and Regulating Station Equipment - City Gate		45	R2.5	-65%		50	R3	39.5	-20%		50	R3	39.5	-20%
380.00	Services		50	R3	-65%		50	R3	40.4	-80%		50	R3	40.4	-65%
381.00	Meters		40	S2	-65%		40	R2.5	32.7	-5%		40	R2.5	32.7	-5%
382.00	Meter Installations		40	R4	-65%		35	R1.5	23.3	-5%		35	R1.5	23.3	-5%

National Grid - Natural Gas Plant
Table 4: Current and Proposed Parameters
As of December 31, 2016

		Current				National Grid Proposed					Division Proposed				
Account	Description	AYFR	Proj Life	Iowa Curve Shape	Future Net Salvage	AYFR	Proj Life	Iowa Curve Shape	Avg Rem Life	Future Net Salvage	AYFR	Proj Life	Iowa Curve Shape	Avg Rem Life	Future Net Salvage
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
383.00	House Regulators		40	R4	-65%		40	R2.5	37.7	0%		40	R2.5	37.7	0%
384.00	House Regulator Installations		40	R4	-65%		40	R2.5	33.1	0%		40	R2.5	33.1	0%
385.00	Industrial Measuring and Regulating Station Equipment		25	R4	-65%		30	R4	22.2	-5%		30	R4	22.2	-5%
386.00	Other Property on Customer Premises		25	R4	-65%		30	R3	12.7	-5%		30	R3	12.7	-5%
387.00	Other Equipment		20	R4	-65%		20	R4	16.1	0%		20	R4	16.1	0%
	Total Depreciable														
	Amortized														
376.04	Mains - Steel and Other		20	SQ	0%		20	SQ	0.0	0%		20	SQ	0.0	0%
376.17	Mains - Joint Seals		30	SQ	0%	2034			18.0	0%	2034			18.0	0%
379.01	Measuring and Regulating Station Equipment - City Gate		20	SQ	0%		20	SQ	0.0	0%		20	SQ	0.0	0%
381.40	Meters - ERTS		15	SQ	0%		15	SQ	9.8	0%		15	SQ	9.8	0%
385.01	Industrial Measuring and Regulating Station Equipment		20	SQ	0%		20	SQ	0.0	0%		20	SQ	0.0	0%
386.02	Other Property on Customer Premises		10	SQ	0%		10	SQ	0.0	0%		10	SQ	0.0	0%
	Total Amortized														
	TOTAL DISTRIBUTION PLANT														
	GENERAL PLANT														
	Depreciable														
390.00	Structures and Improvements		50	R4	-5%		50	S2	31.5	-5%		50	S2	31.5	-5%
397.30	Communication Equipment - Radio		15	R5	0%		20	S2.5	10.9	0%		20	S2.5	10.9	0%
	Total Depreciable														
	Amortized														

National Grid - Natural Gas Plant
Table 4: Current and Proposed Parameters
As of December 31, 2016

		Current				National Grid Proposed					Division Proposed				
Account	Description	AYFR	Proj Life	Iowa Curve Shape	Future Net Salvage	AYFR	Proj Life	Iowa Curve Shape	Avg Rem Life	Future Net Salvage	AYFR	Proj Life	Iowa Curve Shape	Avg Rem Life	Future Net Salvage
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
391.10	Office Furniture and Equipment		15	SQ	0%		15	SQ	8.5	0%		15	SQ	8.5	0%
394.00	Tools, Shop, and Garage Equipment														
	Fully Accrued		15	SQ	0%		Fully Accrued		0.0	0%		Fully Accrued		0.0	0%
	Amortized		15	SQ	0%		20	SQ	14.4	0%		20	SQ	14.4	0%
	Total Tools, Shop, and Garage Equipment														
395.00	Laboratory Equipment				0%		15	SQ	4.4	0%		15	SQ	4.4	0%
397.42	Communication Equipment		5	SQ	0%		5	SQ	2.5	0%		5	SQ	2.5	0%
398.00	Miscellaneous Equipment														
	Fully Accrued		15	SQ	0%		Fully Accrued		0.0	0%		Fully Accrued		0.0	0%
	Amortized		15	SQ	0%		15	SQ	7.1	0%		15	SQ	7.1	0%
	Total Miscellaneous Equipment														
	Total Amortized														
	TOTAL GENERAL PLANT														
	TOTAL DEPRECIABLE PLANT														

NEWS RELEASE
BUREAU OF LABOR STATISTICS
U.S. DEPARTMENT OF LABOR

Transmission of material in this release is embargoed until 8:30 a.m. (EST) January 12, 2018

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CONSUMER PRICE INDEX – DECEMBER 2017

The Consumer Price Index for All Urban Consumers (CPI-U) increased 0.1 percent in December on a seasonally adjusted basis, the U.S. Bureau of Labor Statistics reported today. Over the last 12 months, the all items index rose 2.1 percent before seasonal adjustment.

An increase of 0.4 percent in the shelter index accounted for almost 80 percent of the 1-month all items increase. The food index rose in December, with the indexes for food at home and food away from home both increasing. The energy index, which rose sharply in November, declined in December as the gasoline index decreased.

The index for all items less food and energy increased 0.3 percent in December, its largest increase since January 2017. Along with the shelter index, the indexes for medical care, used cars and trucks, new vehicles, and motor vehicle insurance were among those that increased in December. The indexes for apparel, airline fares, and tobacco all declined over the month.

The all items index rose 2.1 percent for the 12 months ending December, compared to 2.2 percent for the 12 months ending November. The index for all items less food and energy increased 1.8 percent over the last year; the 12-month change has now been either 1.7 or 1.8 percent for eight consecutive months. The food index rose 1.6 percent over the past year; the index for energy increased 6.9 percent, with all of its major component indexes rising during 2017.

Chart 1. One-month percent change in CPI for All Urban Consumers (CPI-U), seasonally adjusted, Dec. 2016 - Dec. 2017
Percent change

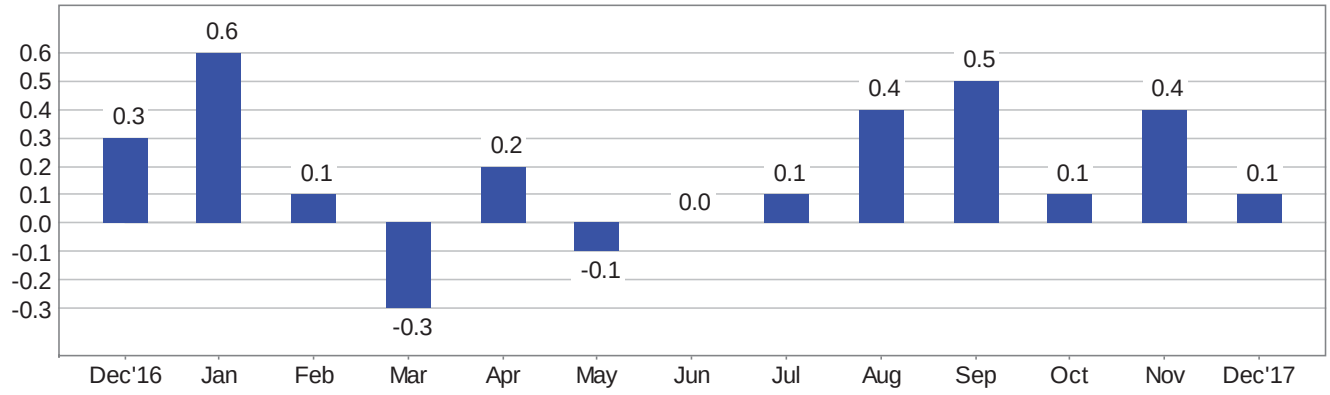

Table 24. Historical Consumer Price Index for All Urban Consumers (CPI-U): U. S. city average, all items-Continued

(1982-84=100, unless otherwise noted)

Year	Semiannual averages		Annual avg.	Percent change from previous	
	1st half	2nd half		Dec.	Annual avg.
1913	-	-	9.9	-	-
1914	-	-	10.0	1.0	1.0
1915	-	-	10.1	2.0	1.0
1916	-	-	10.9	12.6	7.9
1917	-	-	12.8	18.1	17.4
1918	-	-	15.1	20.4	18.0
1919	-	-	17.3	14.5	14.6
1920	-	-	20.0	2.6	15.6
1921	-	-	17.9	-10.8	-10.5
1922	-	-	16.8	-2.3	-6.1
1923	-	-	17.1	2.4	1.8
1924	-	-	17.1	.0	.0
1925	-	-	17.5	3.5	2.3
1926	-	-	17.7	-1.1	1.1
1927	-	-	17.4	-2.3	-1.7
1928	-	-	17.1	-1.2	-1.7
1929	-	-	17.1	.6	.0
1930	-	-	16.7	-6.4	-2.3
1931	-	-	15.2	-9.3	-9.0
1932	-	-	13.7	-10.3	-9.9
1933	-	-	13.0	.8	-5.1
1934	-	-	13.4	1.5	3.1
1935	-	-	13.7	3.0	2.2
1936	-	-	13.9	1.4	1.5
1937	-	-	14.4	2.9	3.6
1938	-	-	14.1	-2.8	-2.1
1939	-	-	13.9	.0	-1.4
1940	-	-	14.0	.7	.7
1941	-	-	14.7	9.9	5.0
1942	-	-	16.3	9.0	10.9
1943	-	-	17.3	3.0	6.1
1944	-	-	17.6	2.3	1.7
1945	-	-	18.0	2.2	2.3
1946	-	-	19.5	18.1	8.3
1947	-	-	22.3	8.8	14.4
1948	-	-	24.1	3.0	8.1
1949	-	-	23.8	-2.1	-1.2
1950	-	-	24.1	5.9	1.3
1951	-	-	26.0	6.0	7.9
1952	-	-	26.5	.8	1.9
1953	-	-	26.7	.7	.8
1954	-	-	26.9	-.7	.7
1955	-	-	26.8	.4	-.4
1956	-	-	27.2	3.0	1.5
1957	-	-	28.1	2.9	3.3
1958	-	-	28.9	1.8	2.8
1959	-	-	29.1	1.7	.7
1960	-	-	29.6	1.4	1.7
1961	-	-	29.9	.7	1.0
1962	-	-	30.2	1.3	1.0
1963	-	-	30.6	1.6	1.3
1964	-	-	31.0	1.0	1.3
1965	-	-	31.5	1.9	1.6
1966	-	-	32.4	3.5	2.9
1967	-	-	33.4	3.0	3.1
1968	-	-	34.8	4.7	4.2
1969	-	-	36.7	6.2	5.5

See footnotes at end of table.

Table 24. Historical Consumer Price Index for All Urban Consumers (CPI-U): U. S. city average, all items-Continued

(1982-84=100, unless otherwise noted)

Year	Semiannual averages		Annual avg.	Percent change from previous	
	1st half	2nd half		Dec.	Annual avg.
1970	-	-	38.8	5.6	5.7
1971	-	-	40.5	3.3	4.4
1972	-	-	41.8	3.4	3.2
1973	-	-	44.4	8.7	6.2
1974	-	-	49.3	12.3	11.0
1975	-	-	53.8	6.9	9.1
1976	-	-	56.9	4.9	5.8
1977	-	-	60.6	6.7	6.5
1978	-	-	65.2	9.0	7.6
1979	-	-	72.6	13.3	11.3
1980	-	-	82.4	12.5	13.5
1981	-	-	90.9	8.9	10.3
1982	-	-	96.5	3.8	6.2
1983	-	-	99.6	3.8	3.2
1984	102.9	104.9	103.9	3.9	4.3
1985	106.6	108.5	107.6	3.8	3.6
1986	109.1	110.1	109.6	1.1	1.9
1987	112.4	114.9	113.6	4.4	3.6
1988	116.8	119.7	118.3	4.4	4.1
1989	122.7	125.3	124.0	4.6	4.8
1990	128.7	132.6	130.7	6.1	5.4
1991	135.2	137.2	136.2	3.1	4.2
1992	139.2	141.4	140.3	2.9	3.0
1993	143.7	145.3	144.5	2.7	3.0
1994	147.2	149.3	148.2	2.7	2.6
1995	151.5	153.2	152.4	2.5	2.8
1996	155.8	157.9	156.9	3.3	3.0
1997	159.9	161.2	160.5	1.7	2.3
1998	162.3	163.7	163.0	1.6	1.6
1999	165.4	167.8	166.6	2.7	2.2
2000	170.8	173.6	172.2	3.4	3.4
2001	176.6	177.5	177.1	1.6	2.8
2002	178.9	180.9	179.9	2.4	1.6
2003	183.3	184.6	184.0	1.9	2.3
2004	187.6	190.2	188.9	3.3	2.7
2005	193.2	197.4	195.3	3.4	3.4
2006	200.6	202.6	201.6	2.5	3.2
2007	205.709	208.976	207.342	4.1	2.8
2008	214.429	216.177	215.303	.1	3.8
2009	213.139	215.935	214.537	2.7	-.4
2010	217.535	218.576	218.056	1.5	1.6
2011	223.598	226.280	224.939	3.0	3.2
2012	228.850	230.338	229.594	1.7	2.1
2013	232.366	233.548	232.957	1.5	1.5
2014	236.384	237.088	236.736	.8	1.6
2015	236.265	237.769	237.017	.7	.1
2016	238.778	241.237	240.007	2.1	1.3
2017	244.076	246.163	245.120	2.1	2.1

- Data not available.
NOTE: Index applies to a month as a whole, not to any specific date.

Statement on Longer-Run Goals and Monetary Policy Strategy

Adopted effective January 24, 2012; as amended effective January 30, 2018

The Federal Open Market Committee (FOMC) is firmly committed to fulfilling its statutory mandate from the Congress of promoting maximum employment, stable prices, and moderate long-term interest rates. The Committee seeks to explain its monetary policy decisions to the public as clearly as possible. Such clarity facilitates well-informed decisionmaking by households and businesses, reduces economic and financial uncertainty, increases the effectiveness of monetary policy, and enhances transparency and accountability, which are essential in a democratic society.

Inflation, employment, and long-term interest rates fluctuate over time in response to economic and financial disturbances. Moreover, monetary policy actions tend to influence economic activity and prices with a lag. Therefore, the Committee's policy decisions reflect its longer-run goals, its medium-term outlook, and its assessments of the balance of risks, including risks to the financial system that could impede the attainment of the Committee's goals.

The inflation rate over the longer run is primarily determined by monetary policy, and hence the Committee has the ability to specify a longer-run goal for inflation. The Committee reaffirms its judgment that inflation at the rate of 2 percent, as measured by the annual change in the price index for personal consumption expenditures, is most consistent over the longer run with the Federal Reserve's statutory mandate. The Committee would be concerned if inflation were running persistently above or below this objective. Communicating this symmetric inflation goal clearly to the public helps keep longer-term inflation expectations firmly anchored, thereby fostering price stability and moderate long-term interest rates and enhancing the Committee's ability to promote maximum employment in the face of significant economic disturbances. The maximum level of employment is largely determined by nonmonetary factors that affect the structure and dynamics of the labor market. These factors may change over time and may not be directly measurable. Consequently, it would not be appropriate to specify a fixed goal for employment; rather, the Committee's policy decisions must be informed by assessments of the maximum level of employment, recognizing that such assessments are necessarily uncertain and subject to revision. The Committee considers a wide range of indicators in making these assessments. Information about Committee participants' estimates of the longer-run normal rates of output growth and unemployment is published four times per year in the FOMC's Summary of Economic Projections. For example, in the most recent projections, the median of FOMC participants' estimates of the longer-run normal rate of unemployment was 4.6 percent.

In setting monetary policy, the Committee seeks to mitigate deviations of inflation from its longer-run goal and deviations of employment from the Committee's assessments of its maximum level. These objectives are generally complementary. However, under circumstances in which the Committee judges that the objectives are not complementary, it follows a balanced approach in promoting them, taking into account the magnitude of the deviations and the potentially different time horizons over which employment and inflation are projected to return to levels judged consistent with its mandate.

The Committee intends to reaffirm these principles and to make adjustments as appropriate at its annual organizational meeting each January.

National Grid - Natural Gas Plant
Accounts 376.1, 376.12, and 376.13, Mains
Historic Net Salvage Adjusted for Annual Inflation Rate of 2%

	Regular	Cost of Removal		Gross Salvage		Net Salvage	
Year	Retirements	Amount	Percent	Amount	Percent	Amount	Percent
A	B	C	D=C/B	E	F=E/B	G=E-C	H=G/B
2005	229,598	151,131	66%	0	0%	(151,131)	-66%
2006	430,882	72,881	17%	0	0%	(72,881)	-17%
2007	425,931	168,534	40%	0	0%	(168,534)	-40%
2008	322,768	159,323	49%	0	0%	(159,323)	-49%
2009	305,094	89,566	29%	0	0%	(89,566)	-29%
2010	737,553	120,284	16%	61	0%	(120,223)	-16%
2011	1,920,289	223,317	12%	0	0%	(223,317)	-12%
2012	2,124,978	1,258,269	59%	0	0%	(1,258,269)	-59%
2013	705,459	169,195	24%	0	0%	(169,195)	-24%
2014	3,834,836	346,782	9%	0	0%	(346,782)	-9%
2015	161,393	531,327	329%	537	0%	(530,790)	-329%
2016	767,345	444,757	58%	0	0%	(444,757)	-58%
Total	11,966,125	3,735,365	31%	598	0%	(3,734,767)	-31%
Three-Year Moving Averages							
2005-2007	362,137	130,849	36%	0	0%	(130,849)	-36%
2006-2008	393,194	133,579	34%	0	0%	(133,579)	-34%
2007-2009	351,264	139,141	40%	0	0%	(139,141)	-40%
2008-2010	455,138	123,057	27%	20	0%	(123,037)	-27%
2009-2011	987,645	144,389	15%	20	0%	(144,369)	-15%
2010-2012	1,594,273	533,957	33%	20	0%	(533,936)	-33%
2011-2013	1,583,575	550,260	35%	0	0%	(550,260)	-35%
2012-2014	2,221,758	591,415	27%	0	0%	(591,415)	-27%
2013-2015	1,567,229	349,101	22%	179	0%	(348,922)	-22%
2014-2016	1,587,858	440,955	28%	179	0%	(440,776)	-28%
Five-Year Average							
2012-2016	1,518,802	550,066	36%	107	0%	(549,958)	-36%

Sources:
Table 24 of CPI Detailed Report published by U.S. Bureau of Labor Statistics
(CPI-U current standard reference base period is 1982-1984=100)
Federal Open Market Committee January 30, 2018
"Statement of Longer-Run Goals and Monetary Policy Strategy."
Page VIII-8 of Schedule NWA-2 Gas

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4770
Responses to Division's First Set of Data Requests
Issued December 19, 2017

Division 1-29

Request:

NWA-2 Gas (2016 Gas Depreciation Study) includes the net salvage history for Account 376 - Mains.

(a) Is it a correct statement that the Mains in Account 376 are generally retired in place? If this is not a correct statement, provide the corrected statement and the support for the corrected statement.

(b) In total for the years 2012-2016, were at least 75% of the Mains in Account 376 that retired during those years retired in place? If this is not a correct statement, provide the corrected statement and the support for the corrected statement.

(c) In total for the years 2012-2016, what percent of the Mains in Account 376 that were retired during those years retired in place?

(d) If the response to part (b) is something other than an unqualified affirmative, explain the most frequent reason that the Mains were not retired in place, and explain how they were physically retired (for example dug up the entire length and physically removed).

Response:

(a) Yes. The vast majority (greater than 95 percent) of Narragansett Gas' mains that are retired are retired in place. The Company infrequently removes retired mains from the ground.

(b) Yes. For the years 2012-2016, at least 75 percent of the mains in Account 376 that were retired were retired in place.

(c) The Company does not track this information; however, most mains are retired in place.

(d) Not applicable.

Prepared by or under the supervision of: Ned Allis

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4770
Responses to Division's Thirty-Third Set of Data Requests
Issued March 9, 2018

Division 33-3

Request:

Is it a correct statement that on the two locations visited (Greenville Ave., Johnston and Newport Ave., Pawtucket) on March 1, 2018 where a gas main and gas services were being replaced, the retired main and services were retired in place? If this is not a correct statement, please provide a corrected statement.

Response:

The statement is correct.

The only retired pipe that is removed from the ground is related to the areas where connections from the existing and new gas mains are made. These sections are typically less than 10 feet in length each, and constitute less than one percent of a typical project's total retired pipe.

Prepared by or under the supervision of: Alfred Amaral

National Grid - Natural Gas Plant
Account 380, Services
Historic Net Salvage Adjusted for Annual Inflation Rate of 2%

	Regular	Cost of Removal		Gross Salvage		Net Salvage	
Year	Retirements	Amount	Percent	Amount	Percent	Amount	Percent
A	B	C	D=C/B	E	F=E/B	G=E-C	H=G/B
2005	497,092	344,794	69%	0	0%	(344,794)	-69%
2006	464,024	282,678	61%	0	0%	(282,678)	-61%
2007	1,017,004	681,727	67%	0	0%	(681,727)	-67%
2008	1,217,931	724,611	59%	0	0%	(724,611)	-59%
2009	1,083,282	863,150	80%	0	0%	(863,150)	-80%
2010	1,395,035	991,913	71%	0	0%	(991,913)	-71%
2011	2,608,124	805,772	31%	0	0%	(805,772)	-31%
2012	2,534,625	1,418,730	56%	279	0%	(1,418,451)	-56%
2013	67,700	71,897	106%	0	0%	(71,897)	-106%
2014	2,202,582	899,211	41%	0	0%	(899,211)	-41%
2015	479,620	1,138,860	237%	0	0%	(1,138,860)	-237%
2016	662,277	385,826	58%	0	0%	(385,826)	-58%
Total	14,229,296	8,609,170	61%	279	0%	(8,608,891)	-61%
Three-Year Moving Averages							
2005-2007	659,373	436,400	66%	0	0%	(436,400)	-66%
2006-2008	899,653	563,005	63%	0	0%	(563,005)	-63%
2007-2009	1,106,072	756,496	68%	0	0%	(756,496)	-68%
2008-2010	1,232,083	859,891	70%	0	0%	(859,891)	-70%
2009-2011	1,695,480	886,945	52%	0	0%	(886,945)	-52%
2010-2012	2,179,261	1,072,138	49%	93	0%	(1,072,045)	-49%
2011-2013	1,736,816	765,467	44%	93	0%	(765,374)	-44%
2012-2014	1,601,636	796,613	50%	93	0%	(796,520)	-50%
2013-2015	916,634	703,323	77%	0	0%	(703,323)	-77%
2014-2016	1,114,826	807,966	72%	0	0%	(807,966)	-72%
Five-Year Average							
2012-2016	1,189,361	782,905	66%	56	0%	(782,849)	-66%

Sources:
Table 24 of CPI Detailed Report published by U.S. Bureau of Labor Statistics
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Federal Open Market Committee January 30, 2018
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The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4770
Responses to Division's First Set of Data Requests
Issued December 19, 2017

Division 1-31

Request:

NWA-2 Gas (2016 Gas Depreciation Study) includes the net salvage history for Account 380 - Services.

(a) Is it a correct statement that the Services in Account 380 are generally retired in place? If this is not a correct statement, provide the corrected statement and the support for the corrected statement.

(b) In total for the years 2012-2016, were at least 75% of the Services in Account 380 that retired during those years retired in place? If this is not a correct statement, provide the corrected statement and the support for the corrected statement.

(c) In total for the years 2012-2016, what percent of the Services in Account 380 that were retired during those years retired in place?

(d) If the response to part (b) is something other than an unqualified affirmative, explain the most frequent reason that the Services were not retired in place, and explain how they were physically retired (for example dug up the entire length and physically removed).

Response:

(a) Yes, it is a correct statement to say that the services in Account 380 are generally retired in place. There are very few instances that services were removed from the ground. Once a service is retired, the only piece physically removed would be the above ground riser located near the foundation (if a riser exists).

(b) Yes, the total for the years 2012-2016 were at least 75 percent of the services in Account 380 that retired during those years retired in place.

(c) The Company does not track this information; however, most services are retired in place.

(d) Not applicable.

Prepared by or under the supervision of: Ned Allis

National Grid - Electric Plant
Accounts 368.1, 368.2, and 368.3, Line Transformers
Historic Net Salvage Adjusted for Annual Inflation Rate of 2%

	Regular	Cost of Removal		Gross Salvage		Net Salvage	
Year	Retirements	Amount	Percent	Amount	Percent	Amount	Percent
A	B	C	D=C/B	E	F=E/B	G=E-C	H=G/B
2004	954,898	210,724	22%	0	0%	(210,724)	-22%
2005	206,297	197,082	96%	0	0%	(197,082)	-96%
2006	2,554,799	558,745	22%	0	0%	(558,745)	-22%
2007	806,710	35,116	4%	0	0%	(35,116)	-4%
2008	442,064	364,050	82%	0	0%	(364,050)	-82%
2009	238,408	303,878	127%	0	0%	(303,878)	-127%
2010	193,590	205,284	106%	0	0%	(205,284)	-106%
2011	123,098	318,844	259%	0	0%	(318,844)	-259%
2012	319,976	295,557	92%	0	0%	(295,557)	-92%
2013	169,448	405,889	240%	0	0%	(405,889)	-240%
2014	413,793	401,268	97%	0	0%	(401,268)	-97%
2015	5,854,293	434,849	7%	0	0%	(434,849)	-7%
2016	712,457	489,618	69%	31	0%	(489,588)	-69%
Total	12,989,829	4,220,904	32%	31	0%	(4,220,874)	-32%
Three-Year Moving Averages							
2004-2006	1,238,665	322,184	26%	0	0%	(322,184)	-26%
2005-2007	1,189,269	263,647	22%	0	0%	(263,647)	-22%
2006-2008	1,267,858	319,304	25%	0	0%	(319,304)	-25%
2007-2009	495,727	234,348	47%	0	0%	(234,348)	-47%
2008-2010	291,354	291,071	100%	0	0%	(291,071)	-100%
2009-2011	185,032	276,002	149%	0	0%	(276,002)	-149%
2010-2012	212,221	273,228	129%	0	0%	(273,228)	-129%
2011-2013	204,174	340,097	167%	0	0%	(340,097)	-167%
2012-2014	301,072	367,571	122%	0	0%	(367,571)	-122%
2013-2015	2,145,845	414,002	19%	0	0%	(414,002)	-19%
2014-2016	2,326,848	441,911	19%	10	0%	(441,901)	-19%
Five-Year Average							
2012-2016	1,493,993	405,436	27%	6	0%	(405,430)	-27%

Sources:
Table 24 of CPI Detailed Report published by U.S. Bureau of Labor Statistics
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Federal Open Market Committee January 30, 2018
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