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July 25, 2022

**VIA ELECTRONIC FILING**

Public Utility Commission of Oregon  
Attention: Filing Center  
201 High Street SE, Suite 100  
Salem, Oregon 97301-3398

**Re: UM 2214 — NW Natural's Updated Depreciation Study  
Joint Stipulation and Joint Testimony in Support of Stipulation**

Northwest Natural Gas Company, dba NW Natural ("NW Natural" or the "Company"), hereby submits the Joint Stipulation and Joint Testimony in support of the Stipulation on behalf NW Natural, Staff of the Public Utility Commission of Oregon ("Staff"), and Alliance of Western Energy Consumers ("AWEC").

Please address correspondence on this matter to me with copies to the following:

eFiling  
Rates & Regulatory Affairs  
NW Natural  
250 SW Taylor Street  
Portland, Oregon 97204  
Phone: (503) 610-7330  
Fax: (503) 220-2579  
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Sincerely,

*/s/ Eric W. Nelsen*  
Senior Regulatory Attorney (OSB #192566)  
NW Natural  
250 SW Taylor Street  
Portland, Oregon 97204  
Phone: (503) 610-7618  
Fax: (503) 220-2579  
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Enclosures

**BEFORE THE PUBLIC UTILITY COMMISSION  
OF OREGON**

**UM 2214**

In the Matter of

NORTHWEST NATURAL GAS  
COMPANY, dba, NW NATURAL

Updated Depreciation Study Pursuant  
to OAR 860-027-0350

**STIPULATION**

1           This Stipulation resolves all issues among all parties to this docket related to  
2 Northwest Natural Gas Company's ("NW Natural" or "Company") Updated Depreciation  
3 Study Pursuant to OAR 860-027-0350 ("Depreciation Study") filed with the Commission  
4 in Docket UM 2214 on December 17, 2021.

5

6

**PARTIES**

7           1. The parties to this Stipulation are Staff of the Public Utility Commission of  
8 Oregon ("Staff"), Alliance of Western Energy Consumers ("AWEC"), and NW Natural  
9 (together, the "Stipulating Parties"). The Oregon Citizens' Utility Board ("CUB") also is  
10 a party to this docket and has authorized the Stipulating Parties to represent that CUB  
11 takes no position on this Stipulation.

12

13

**BACKGROUND**

14           2. On December 17, 2021, NW Natural filed with the Oregon Public Utility  
15 Commission ("Commission") the updated Depreciation Study of its gas plant in service  
16 as of December 31, 2020, pursuant to OAR 860-027-0350, which requires each energy

1 utility to file with the Commission an updated depreciation study at least once every five  
2 years. ORS 757.140 requires each public utility to carry a proper and adequate  
3 depreciation account, and to conform its depreciation accounts to the rates so  
4 ascertained and determined by the Commission. The Commission may make changes  
5 in such rates of depreciation from time to time as the Commission may find necessary.  
6 The purpose of the Depreciation Study is to determine the annual depreciation accrual  
7 rates and amounts for accounting and ratemaking purposes. The Depreciation Study  
8 included descriptions of the methods used in the estimation of depreciation, the  
9 summary of annual depreciation accrual rates, the statistical support for the life and net  
10 salvage estimates, and the detailed tabulations of annual depreciation (“depreciation  
11 rates”).

12 3. The Depreciation Study set forth an annual system depreciation expense of  
13 \$116.2 million when applied to depreciable plant balances as of December 31, 2020,  
14 which reflected an approximate \$8.6 million increase to NW Natural’s annual  
15 depreciation expense.

16 4. On May 26, 2022, NW Natural, Staff, and AWEC participated in a settlement  
17 conference. The discussions resulted in a settlement among the Stipulating Parties.  
18 The Stipulating Parties agree that the depreciation rates agreed to in this Stipulation will  
19 result in an annual depreciation expense of approximately \$106.85 million, resulting in  
20 an approximate \$9.36 million decrease from the annual depreciation expense proposed  
21 in the Depreciation Study. Attached Stipulation Exhibit “A” Table 1 includes a complete  
22 list of all NW Natural depreciation parameters for all utility plant by FERC account.

## TERMS OF STIPULATION

1  
2           5.     This Stipulation resolves all issues regarding the changes to the Company's  
3 depreciation rates proposed in the Depreciation Study.

4           6.     The Stipulating Parties agree that the changes shown in Stipulation Exhibit  
5 "A" should be made to the depreciation rates in the Depreciation Study.

6           7.     The Stipulating Parties agree that the depreciation rates set forth in  
7 Stipulation Exhibit "A" are reasonable and should be adopted.

8           8.     NW Natural agrees to use the depreciation rates in Stipulation Exhibit "A",  
9 if approved by the Commission, as the basis for its depreciation rates in the Company's  
10 pending general rate case proceeding (UG 435), in accordance with the Multi-Party  
11 Stipulation Regarding Revenue Requirement, Rate Spread and Certain Other Issues filed  
12 in that docket on May 31, 2022 ("Multi-Party Stipulation"), upon Commission approval of  
13 the Multi-Party Stipulation. NW Natural will simultaneously update its depreciation rates  
14 on its books when new retail rates are effective following the UG 435 general rate case.  
15 For the avoidance of any doubt, it is the Stipulating Parties' intention to comply with all  
16 normalization requirements and, if this Stipulation were to be determined to be out of  
17 compliance with such requirements, the Stipulating Parties would address such  
18 determination at the next available opportunity.

19           9.     The Stipulating Parties agree to submit this Stipulation to the Commission  
20 and request that the Commission approve the Stipulation as presented.

21           10.    The Stipulating Parties agree that this Stipulation is in the public interest,  
22 and will result in rates that are fair, just and reasonable, consistent with the standard in  
23 ORS 756.040.

1           11.     This Stipulation will be offered into the record as evidence pursuant to OAR  
2     860-001-0350(7). The Stipulating Parties agree to support this Stipulation throughout  
3     these consolidated proceedings and any appeal, provide witnesses to sponsor this  
4     Stipulation at hearing, and recommend that the Commission issue an order adopting  
5     this Stipulation. The Stipulating Parties also agree to cooperate in drafting and  
6     submitting joint testimony or a brief in support of this Stipulation in accordance with OAR  
7     860-001-0350(7).

8           12.     If this Stipulation is challenged, the Stipulating Parties agree that they will  
9     continue to support the Commission's adoption of the terms of this Stipulation. The  
10    Stipulating Parties agree to cooperate in cross-examination and put on such a case as  
11    they deem appropriate to respond fully to the issues presented, which may include  
12    raising issues that are incorporated in the settlements embodied in this Stipulation.

13          13.     The revised depreciation rates should be implemented on the effective date  
14    of NWN's pending general rate request in Docket UG No. 435, currently expected to be  
15    November 1, 2022.

16          14.     The Stipulating Parties have negotiated this Stipulation as an integrated  
17    document. If the Commission rejects all or any material portion of this Stipulation or  
18    imposes additional material conditions in approving this Stipulation, any of the  
19    Stipulating Parties are entitled to withdraw from this Stipulation or exercise any other  
20    rights provided in OAR 860-001-0350(9).

21          15.     No later than December 31, 2027, NWN shall file with the Commission  
22    another detailed depreciation study of its utility property. The depreciation parameters

1 detailed in Stipulation Exhibit “A” Table 1 will be utilized until the effective date of the  
2 next depreciation study.

3 16. By entering into this Stipulation, no Stipulating Party approves, admits, or  
4 consents to the facts, principles, methods, or theories employed by any other Stipulating  
5 Party in arriving at the terms of this Stipulation, other than those specifically identified  
6 in the body of this Stipulation. No Stipulating Party shall be deemed to have agreed  
7 that any provision of this Stipulation is appropriate for resolving issues in any other  
8 proceeding, except as specifically identified in this Stipulation.

9 17. The substantive terms of this Stipulation are not enforceable by any  
10 Stipulating Party unless and until adopted by the Commission in a final order. Each  
11 Stipulating Party avers that it is signing this Stipulation in good faith and that it intends  
12 to abide by the terms of this Stipulation unless and until this Stipulation is rejected or  
13 adopted only in part by the Commission. The Stipulating Parties agree that the  
14 Commission has exclusive jurisdiction to enforce or modify this Stipulation. If the  
15 Commission rejects or modifies this Stipulation, the Stipulating Parties reserve the right  
16 to seek reconsideration or rehearing of the Commission order under ORS 756.561 and  
17 OAR 860-001-0720 or to appeal the Commission order under ORS 756.610.

18 18. This Stipulation may be executed in counterparts and each signed  
19 counterpart shall constitute an original document.

20 This Stipulation is entered into by each Stipulating Party on the date entered below  
21 such Stipulating Party’s signature.

STAFF

By: /s/Stephanie Andrus

Date: 07/25/2022

AWEC

By: /s/ Chad Stokes

Date: 07/25/2022

NW NATURAL

By: /s/Eric W. Nelsen

Date: 07/25/2022

NORTHWEST NATURAL GAS COMPANY

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVE, NET SALVAGE PERCENT, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO GAS PLANT AS OF DECEMBER 31, 2020

UM2214		PROBABLE RETIREME YEAR	SURVIVOR CURVE	NET SALVAGE PERCENT	ORIGINAL COST AS OF DECEMBER 31, 2020	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT		COMPOSITE REMAINING LIFE
(1)		#	(3)	(4)	(5)	(6)	(7)	(8)	(9)=(8)/(5)	(10)=(7)/(8)
<b>DEPRECIABLE GAS PLANT</b>										
<b>INTANGIBLE PLANT</b>										
303.10	MISCELLANEOUS INTANGIBLE PLA		15-SQ	0	130,778,162.03	42,277,641	88,500,521	9,317,628	7.12	9.5
303.20	MISCELLANEOUS INTANGIBLE PLA		15-SQ	0	32,409,597.11	32,398,247	11,350	1,513	-	7.5
303.30	MISCELLANEOUS INTANGIBLE PLA		10-SQ	0	4,146,951.00	4,146,951	0	0	-	-
303.40	MISCELLANEOUS INTANGIBLE PLA		5-SQ	0	4,264,625.00	455,690	3,808,935	846,430	19.85	4.5
<b>TOTAL INTANGIBLE PLANT</b>					<b>171,599,335.14</b>	<b>79,278,529</b>	<b>92,320,806</b>	<b>10,165,571</b>	<b>5.92</b>	
<b>OIL GAS FACILITIES</b>										
305.50	STRUCTURES AND IMPROVEMENT		40-S1	(5)	13,156.00	13,814	0	0	-	-
311.70	LIQUEFIED PETROLEUM GAS EQUI		20-L0.5	(5)	4,033.00	8,066	(3,831)	0	-	-
311.80	LIQUEFIED PETROLEUM GAS EQUI		20-L0.5	(5)	4,209.00	6,585	(2,166)	0	-	-
<b>TOTAL OIL GAS FACILITIES</b>					<b>21,398.00</b>	<b>28,465</b>	<b>(5,997)</b>	<b>0</b>	-	
<b>OTHER PRODUCTION FACILITIES</b>										
305.11	STRUCTURES AND IMPROVEMENT		40-S1	(5)	8,320.00	8,736	0	0	-	-
305.17	STRUCTURES AND IMPROVEMENT		40-S1	(5)	46,587.00	51,246	(2,330)	0	-	-
318.30	LIGHT OIL REFINING		45-S2.5	(5)	144,896.00	152,141	0	0	-	-
318.50	TAR PROCESSING		45-S2.5	(5)	243,551.00	255,729	0	0	-	-
319.00	GAS MIXING EQUIPMENT		30-R0.5	(5)	185,448.00	194,720	0	0	-	-
<b>TOTAL OTHER PRODUCTION FACILITIES</b>					<b>628,802.00</b>	<b>662,572</b>	<b>(2,330)</b>	<b>0</b>	-	



NORTHWEST NATURAL GAS COMPANY

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVE, NET SALVAGE PERCENT, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO GAS PLANT AS OF DECEMBER 31, 2020

UM2214		PROBABLE RETIREME SURVIVOR		NET	ORIGINAL COST	BOOK	FUTURE	CALCULATED ANNUAL		COMPOSITE
DEPRECIABLE GROUP		YEAR	CURVE	SALVAGE	AS OF	DEPRECIATION	ACCRUALS	ACCRAU	ACCRAU	REMAINING
(1)		#	(3)	(4)	DECEMBER 31, 2020	RESERVE	(7)	AMOUNT	RATE	LIFE
					(5)	(6)		(8)	(9)=(8)/(5)	(10)=(7)/(8)
<b>UNDERGROUND STORAGE PLANT</b>										
350.20	LAND RIGHTS		70-R4	0	109,624.94	33,571	76,054	1,550	1.41	49.1
351.00	STRUCTURES AND IMPROVEMENT		60-R3	0	8,634,151.05	3,183,307	5,450,844	129,257	1.50	42.2
352.00	WELLS		60-R2	0	48,342,203.61	17,821,376	30,520,828	642,069	1.33	47.5
352.10	STORAGE LEASEHOLDS AND RIGH		65-R3	0	3,939,511.52	1,877,200	2,062,312	48,118	1.22	42.9
352.20	RESERVOIRS		60-R2	0	10,834,054.54	3,993,229	6,840,826	157,415	1.45	43.5
352.30	NONRECOVERABLE GAS		60-R4	0	6,440,889.82	3,760,889	2,680,001	83,608	1.30	32.1
353.00	LINES		55-S2.5	(15)	10,782,441.99	4,162,308	8,237,500	220,699	2.05	37.3
354.10	COMPRESSOR STATION EQUIPMEI		50-R3	(10)	4,154,699.66	3,033,816	1,536,354	68,760	1.65	22.3
354.20	COMPRESSOR STATION EQUIPMEI		50-R3	(10)	4,154,699.00	3,095,469	1,474,700	67,896	1.63	21.7
354.30	COMPRESSOR STATION EQUIPMEI		50-R3	(10)	14,640,514.36	7,466,735	8,637,831	280,918	1.92	30.7
354.40	COMPRESSOR STATION EQUIPMEI		50-R3	(10)	13,664,779.76	6,348,010	8,683,248	267,716	1.96	32.4
354.50	COMPRESSOR STATION EQUIPMEI		50-R3	(10)	3,554,433.18	997,616	2,912,260	73,378	2.06	39.7
354.60	COMPRESSOR STATION EQUIPMEI		50-R3	(10)	260,041.78	36,859	249,187	5,585	2.15	44.6
355.00	MEASURING AND REGULATING EQ		45-S2	(10)	18,671,983.61	7,611,612	12,927,570	421,049	2.25	30.7
356.00	PURIFICATION EQUIPMENT		45-S2.5	(5)	28,182,836.19	329,223	29,262,755	663,643	2.35	44.1
357.00	OTHER EQUIPMENT		35-R4	0	4,659,987.72	1,048,877	3,611,111	117,066	2.51	30.8
<b>TOTAL UNDERGROUND STORAGE PLANT</b>					<b>181,026,852.73</b>	<b>64,800,097</b>	<b>125,163,381</b>	<b>3,248,727</b>	<b>1.79</b>	

NORTHWEST NATURAL GAS COMPANY

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVE, NET SALVAGE PERCENT, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO GAS PLANT AS OF DECEMBER 31, 2020

UM2214		PROBABLE RETIREME	SURVIVOR	NET SALVAGE PERCENT	ORIGINAL COST AS OF DECEMBER 31, 2020	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	ACCRUAL RATE	COMPOSITE REMAINING LIFE	
DEPRECIABLE GROUP	YEAR	CURVE									
(1)	#	(3)		(4)	(5)	(6)	(7)	(8)	(9)=(8)/(5)	(10)=(7)/(8)	
<b>LOCAL STORAGE PLANT</b>											
361.00	STRUCTURES AND IMPROVEMENTS										
	LINNTON	#	60-R2.5	*	(5)	10,716,040.15	3,568,422	7,683,420	504,072	4.70	15.2
	NEWPORT	#	60-R2.5	*	(5)	12,124,670.23	3,667,556	9,063,348	437,238	3.61	20.7
	OTHER		60-R2.5		(5)	26,757.00	12,839	15,256	414	1.55	36.9
	TOTAL STRUCTURES AND IMPROVEMENTS					22,867,467.38	7,248,817	16,762,024	941,724	4.12	17.8
362.00	GAS HOLDERS										
	LINNTON	#	60-R3	*	(20)	4,556,064.35	2,687,761	2,779,516	188,391	4.13	14.8
	NEWPORT	#	60-R3	*	(20)	5,927,103.82	6,181,983	930,542	52,571	0.89	17.7
	OTHER		60-R3		(20)	1,600.14	1,266	654	15	0.94	43.6
	TOTAL GAS HOLDERS					10,484,768.31	8,871,010	3,710,712	240,977	2.30	15.4
363.10	LIQUEFACTION EQUIPMENT										
	LINNTON	#	55-R2	*	(5)	3,450,201.82	2,737,274	885,438	59,074	1.71	15.0
	NEWPORT	#	55-R2	*	(5)	15,748,403.83	7,452,351	9,083,473	447,428	2.84	20.3
	TOTAL LIQUEFACTION EQUIPMENT					19,198,605.65	10,189,625	9,968,911	506,502	2.64	19.7
363.20	VAPORIZING EQUIPMENT										
	LINNTON	#	40-R4	*	(5)	4,458,618.00	2,493,915	2,187,634	149,696	3.36	14.6
	NEWPORT	#	40-R4	*	(5)	6,707,648.71	562,843	6,480,188	311,211	4.64	20.8
	TOTAL VAPORIZING EQUIPMENT					11,166,266.71	3,056,758	8,667,822	460,907	4.13	18.8
363.30	COMPRESSOR EQUIPMENT										
	LINNTON	#	41-R1.5	*	(5)	180,903.23	154,597	35,351	2,634	1.46	13.4
	NEWPORT	#	41-R1.5	*	(5)	4,744,494.04	1,486,694	3,495,025	177,120	3.73	19.7
	TOTAL COMPRESSOR EQUIPMENT					4,925,397.27	1,641,291	3,530,376	179,754	3.65	19.6
363.40	MEASURING AND REGULATING EQUIPMENT										
	LINNTON	#	50-R4	*	(5)	3,244,884.69	914,115	2,493,014	171,812	5.29	14.5
	NEWPORT	#	50-R4	*	(5)	10,663,386.23	278,977	10,917,579	512,867	4.81	21.3
	TOTAL MEASURING AND REGULATING EQUIPMENT					13,908,270.92	1,193,092	13,410,593	684,679	4.92	19.6
363.50	CNG REFUELING FACILITIES		31-R3		(5)	3,051,295.49	1,591,921	1,611,939	79,206	2.60	20.4
363.60	LNG REFUELING FACILITIES		45-S2.5		(5)	739,473.00	739,473	36,974	1,820	0.25	20.3
<b>TOTAL LOCAL STORAGE PLANT</b>						<b>86,341,544.73</b>	<b>34,531,987</b>	<b>57,699,351</b>	<b>3,095,569</b>	<b>3.59</b>	

NORTHWEST NATURAL GAS COMPANY

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVE, NET SALVAGE PERCENT, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO GAS PLANT AS OF DECEMBER 31, 2020

UM2214		PROBABLE RETIREME	NET SALVAGE	ORIGINAL COST AS OF DECEMBER 31, 2020	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL		COMPOSITE REMAINING LIFE
DEPRECIABLE GROUP	YEAR	SURVIVOR CURVE	PERCENT				AMOUNT	RATE	
(1)	#	(3)	(4)	(5)	(6)	(7)	(8)	(9)=(8)/(5)	(10)=(7)/(8)
<b>TRANSMISSION PLANT</b>									
365.20	LAND RIGHTS	75-R4	0	6,455,176.86	2,322,594	4,132,583	84,208	1.30	49.1
366.30	STRUCTURES AND IMPROVEMENT	55-R3	0	1,546,072.61	412,870	1,133,203	27,003	1.75	42.0
367.00	MAINS	70-R3	(30)	188,276,558.85	35,068,866	209,690,661	3,404,001	1.81	61.6
367.21	MAINS - NORTH MIST	70-R3	(30)	1,994,582.39	1,245,979	1,346,978	29,066	1.46	46.3
367.22	MAINS - SOUTH MIST	70-R3	(30)	14,949,264.00	11,490,417	7,943,626	195,623	1.31	40.6
367.23	MAINS - SOUTH MIST	70-R3	(30)	34,881,341.36	15,930,670	29,415,074	590,355	1.69	49.8
367.24	MAINS - 11.7M S MIST	70-R3	(30)	17,466,181.89	6,835,289	15,870,747	298,659	1.71	53.1
367.25	MAINS - 12M NORTH S MIST	70-R3	(30)	18,613,651.15	6,984,265	17,213,481	321,303	1.73	53.6
367.26	MAINS - 38M NORTH S MIST	70-R3	(30)	68,232,675.58	25,782,091	62,920,387	1,174,836	1.72	53.6
368.00	COMPRESSOR STATION EQUIPMEI	45-R3	(5)	7,723,454.21	2,884,478	5,225,149	158,338	2.05	33.0
369.00	MEASURING AND REGULATING EQ	50-R2.5	(10)	3,969,550.28	1,823,192	2,543,313	71,661	1.81	35.5
<b>TOTAL TRANSMISSION PLANT</b>				<b>364,108,509.18</b>	<b>110,780,711</b>	<b>357,435,202</b>	<b>6,355,053</b>	<b>1.75</b>	
<b>DISTRIBUTION PLANT</b>									
374.20	LAND RIGHTS	75-R3	0	1,886,180.64	1,702,286	183,895	3,079	0.16	59.7
375.00	STRUCTURES AND IMPROVEMENT	35-S0	0	1,519,558.28	135,155	1,384,403	53,310	3.51	26.0
376.11	MAINS - HP 4" AND LESS	70-R3	(55)	658,475,597.80	357,154,000	663,483,177	12,886,185	1.96	51.5
376.12	MAINS - HP 4" AND OVER	70-R3	(55)	665,678,335.92	257,577,034	774,224,387	14,227,701	2.14	54.4
377.00	COMPRESSOR STATION EQUIPMEI	35-S2	(5)	818,380.00	688,761	170,538	9,115	1.11	18.7
378.00	MEASURING AND REGULATING ST.	55-R2.5	(25)	41,139,658.95	13,074,028	38,350,546	907,949	2.21	42.2
379.00	MEASURING AND REGULATING ST.	50-R2	(25)	18,110,616.93	3,212,848	19,425,423	423,933	2.34	45.8
380.00	SERVICES	65-R2	(99)	875,426,720.52	444,534,925	1,297,564,249	26,004,435	2.97	49.9
381.00	METERS	33-R1	0	106,548,353.39	22,306,515	84,241,838	3,749,285	3.52	22.5
381.10	METERS - ELECTRIC	16-S4	0	1,696,938.46	1,386,751	310,187	36,445	2.15	8.5
381.20	METERS - ERT	18-R2	0	43,676,207.05	19,996,313	23,679,894	2,260,193	5.17	10.5
382.00	METER INSTALLATIONS	32-S0.5	0	64,212,622.94	4,154,436	60,058,187	3,691,350	5.75	16.3
382.10	METER INSTALLATIONS - ELECTRIC	14-L3	0	481,019.77	162,824	318,196	51,075	10.62	6.2
382.20	METER INSTALLATIONS - ERT	20-R2	0	9,174,695.76	6,045,561	3,129,135	283,193	3.09	11.0
383.00	HOUSE REGULATORS	40-S2	0	2,553,747.52	467,032	2,086,716	62,330	2.44	33.5
386.00	OTHER PROPERTY ON CUSTOMER	10-S6	0	1,162,110.41	388,027	774,083	119,090	10.25	6.5
387.10	OTHER EQUIPMENT - CATHODIC P	30-S3	0	173,858.98	146,273	27,586	1,693	0.97	16.3
387.20	OTHER EQUIPMENT - CALORIMETE	23-S0.5	0	96,424.00	96,424	0	0	-	-
387.30	OTHER EQUIPMENT - METER TEST	25-S4	0	72,671.00	72,671	0	0	-	-
<b>TOTAL DISTRIBUTION PLANT</b>				<b>2,492,903,698.32</b>	<b>1,133,301,864</b>	<b>2,969,412,440</b>	<b>64,770,361</b>	<b>2.60</b>	

NORTHWEST NATURAL GAS COMPANY

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVE, NET SALVAGE PERCENT, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO GAS PLANT AS OF DECEMBER 31, 2020

UM2214		PROBABLE	NET	ORIGINAL COST	BOOK	FUTURE	CALCULATED ANNUAL		COMPOSITE
DEPRECIABLE GROUP	RETIREME	SURVIVOR	SALVAGE	AS OF	DEPRECIATION	ACCRUALS	ACCRUAL	ACCRUAL	REMAINING
(1)	YEAR	CURVE	PERCENT	DECEMBER 31, 2020	RESERVE	(7)	AMOUNT	RATE	LIFE
	#	(3)	(4)	(5)	(6)		(8)	(9)=(8)/(5)	(10)=(7)/(8)
<b>GENERAL PLANT</b>									
390.00	STRUCTURES AND IMPROVEMENT	48-S0	(5)	76,076,719.92	15,137,283	64,743,273	1,596,868	2.10	40.5
390.10	STRUCTURES AND IMPROVEMENT	48-S0	(5)	21,288,272.24	6,048,763	16,303,923	388,018	1.82	42.0
391.10	OFFICE FURNITURE AND EQUIPME	20-SQ	0	17,096,600.38	4,023,370	13,073,230	855,517	5.00	15.3
391.20	OFFICE FURNITURE AND EQUIPME	5-SQ	0	54,361,086.44	20,496,560	33,864,526	10,872,979	20.00	3.1
392.00	TRANSPORTATION EQUIPMENT	13-L2	15	54,519,109.80	14,675,021	31,666,222	3,681,303	6.75	8.6
393.00	STORES EQUIPMENT	FULLY ACCRUED		119,406.00	119,406	0	0	-	-
394.00	TOOLS, SHOP AND GARAGE EQUIF	25-SQ	0	16,925,338.80	5,180,775	11,744,564	677,012	4.00	17.3
396.00	POWER OPERATED EQUIPMENT	17-L1.5	24	14,021,593.89	2,966,394	7,690,017	611,810	4.36	12.6
397.00	COMMUNICATION EQUIPMENT	15-SQ	0	67,400.78	45,230	22,171	4,494	6.67	4.9
397.10	COMMUNICATION EQUIPMENT - MC	10-SQ	0	4,256,889.70	640,080	3,616,810	425,688	10.00	8.5
397.20	COMMUNICATION EQUIPMENT - NC	15-SQ	0	9,957.65	4,980	4,978	664	6.67	7.5
397.30	COMMUNICATION EQUIPMENT - TE	15-SQ	0	6,759,709.02	1,343,445	5,416,264	450,853	6.67	12.0
397.40	COMMUNICATION EQUIPMENT - TE	15-SQ	0	5,723,453.25	1,066,715	4,656,738	382,030	6.67	12.2
397.50	COMMUNICATION EQUIPMENT - TE	10-SQ	0	490,766.50	339,930	150,836	49,076	10.00	3.1
398.10	MISCELLANEOUS EQUIPMENT - PR	15-SQ	0	4,359.31	3,342	1,017	291	6.67	3.5
398.20	MISCELLANEOUS EQUIPMENT - KI	15-SQ	0	28,864.84	9,505	19,360	1,924	6.67	10.1
398.30	MISCELLANEOUS EQUIPMENT - JA	FULLY ACCRUED		14,873.00	14,873	0	0	-	-
398.40	MISCELLANEOUS EQUIPMENT - LEASED	FULLY ACCRUED		10,120.00	10,120	0	0	-	-
398.50	MISCELLANEOUS EQUIPMENT - OTHER	FULLY ACCRUED		66,739.00	66,739	0	0	-	-
<b>TOTAL GENERAL PLANT</b>				<b>271,841,260.52</b>	<b>72,192,531</b>	<b>192,973,929</b>	<b>19,998,527</b>	<b>7.36</b>	

NORTHWEST NATURAL GAS COMPANY

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVE, NET SALVAGE PERCENT, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO GAS PLANT AS OF DECEMBER 31, 2020

UM2214		PROBABLE		NET	ORIGINAL COST	BOOK	FUTURE	CALCULATED ANNUAL		COMPOSITE
DEPRECIABLE GROUP	RETIREME	SURVIVOR	SALVAGE	AS OF	DEPRECIATION	ACCRAUAL		ACCRAUAL	REMAINING	
(1)	YEAR	CURVE	PERCENT	DECEMBER 31, 2020	RESERVE	ACCRAUALS	AMOUNT	RATE	LIFE	
	#	(3)	(4)	(5)	(6)	(7)	(8)	(9)=(8)/(5)	(10)=(7)/(8)	
<b>RESERVE ADJUSTMENT FOR AMORTIZATION</b>										
391.10	OFFICE FURNITURE AND EQUIPMENT				1,979,631		(395,926)	**		
391.20	OFFICE FURNITURE AND EQUIPMENT - COMPUTERS				1,887,272		(377,454)	**		
394.00	TOOLS, SHOP AND GARAGE EQUIPMENT				843,257		(168,651)	**		
395.00	LABORATORY EQUIPMENT				(22)		4	**		
397.00	COMMUNICATION EQUIPMENT				(4,236)		847	**		
397.10	COMMUNICATION EQUIPMENT - MOBILE				(34,713)		6,943	**		
397.20	COMMUNICATION EQUIPMENT - NON-MOBILE AND TELEMETER				(32,872)		6,574	**		
397.30	COMMUNICATION EQUIPMENT - TELEMETER OTHER				(560,130)		112,026	**		
397.40	COMMUNICATION EQUIPMENT - TELEMETER MICROWAVE				(298,740)		59,748	**		
397.50	COMMUNICATION EQUIPMENT - TELEPHONE				131,075		(26,215)	**		
398.10	MISCELLANEOUS EQUIPMENT - PRINT SHOP				(53)		11	**		
398.20	MISCELLANEOUS EQUIPMENT - KITCHEN				(1,747)		349	**		
<b>TOTAL RESERVE ADJUSTMENT FOR AMORTIZATION</b>						<b>3,908,722</b>		<b>(781,744)</b>		
<b>TOTAL DEPRECIABLE GAS PLANT</b>					<b>3,568,471,400.62</b>	<b>1,499,485,478</b>	<b>3,794,996,782</b>	<b>106,852,064</b>	<b>2.99</b>	

NORTHWEST NATURAL GAS COMPANY

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVE, NET SALVAGE PERCENT, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO GAS PLANT AS OF DECEMBER 31, 2020

UM2214		PROBABLE		NET	ORIGINAL COST	BOOK	FUTURE	CALCULATED ANNUAL		COMPOSITE
DEPRECIABLE GROUP	RETIREME	SURVIVOR	SALVAGE	AS OF	DEPRECIATION	ACCRAU		ACCRAU	REMAINING	
(1)	YEAR	CURVE	PERCENT	DECEMBER 31, 2020	RESERVE	ACCRAUALS	AMOUNT	RATE	LIFE	
	#	(3)	(4)	(5)	(6)	(7)	(8)	(9)=(8)/(5)	(10)=(7)/(8)	
<b>NONDEPRECIABLE GAS PLANT</b>										
301.00	ORGANIZATION			1,174.00						
302.00	FRANCHISES AND CONSENTS			83,621.00						
304.10	LAND			24,998.00						
350.10	LAND			106,549.00						
360.11	LAND - LNG LINNTON			83,598.00						
360.12	LAND - LNG NEWPORT			536,675.00						
360.20	LAND - OTHER			106,557.00						
365.10	LAND			1,015,597.00						
374.10	LAND			211,692.00						
389.00	LAND			13,063,368.00		437,351				
	ROU UTILITY LEASE					8,415,272				
	FIN UTILITY LEASE					28,977				
<b>TOTAL NONDEPRECIABLE GAS PLANT</b>				<b>15,233,829.00</b>		<b>8,881,600</b>				
<b>TOTAL GAS PLANT IN SERVICE</b>				<b>3,583,705,229.62</b>		<b>1,508,367,078</b>				

\* INDICATES INTERIM SURVIVOR CURVE. EACH UNIT HAS A UNIQUE TERMINAL DATE.

\*\* 5 YEAR AMORTIZATION OF RESERVE RELATED TO AMORTIZATION ACCOUNTING.

BEFORE THE PUBLIC UTILITY COMMISSION  
OF OREGON

**UM 2214**

In the Matter of

NORTHWEST NATURAL GAS  
COMPANY, dba, NW NATURAL

Updated Depreciation Study Pursuant  
to OAR 860-027-0350.

JOINT TESTIMONY IN SUPPORT OF STIPULATION

WITNESSES: John Spanos, Ming Peng, and Bradley Mullins

July 25, 2022

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**INTRODUCTION**

**Q. Please state your names, occupations, and business addresses.**

A. My name is John Spanos. My current position is President at Gannett Fleming Valuation and Rate Consultants, LLC (“Gannett Fleming”). I am testifying on behalf of Northwest Natural Gas Company (“NW Natural” or the “Company”). My business address is 207 Senate Avenue, Camp Hill, PA 17011. My witness qualification statement is set forth in Exhibit 101.

My name is Ming Peng. I am a Senior Economist for the Public Utility Commission of Oregon (“Commission” or “OPUC”). My business address is 201 High Street SE, Salem, OR 97301. My witness qualification statement is set forth in Exhibit 102.

My name is Bradley G. Mullins. I am a Consultant for MW Analytics, an independent consulting firm representing utility customers before state public utility commissions in the Northwest and Intermountain West. I am testifying on behalf of the Alliance of Western Energy Consumers (“AWEC”). My witness qualification statement is set forth in Exhibit 103.

**Q. What is the purpose of your Joint Testimony?**

A. This Joint Testimony addresses the depreciation study submitted by NW Natural to the Commission on December 17, 2021 (the “Depreciation Study”). The purpose of this Joint Testimony is to describe and provide support for the Stipulation among NW Natural, Commission Staff, and AWEC (together, the “Stipulating Parties”). The adjustments to NW Natural’s Depreciation Study discussed in the Stipulation are reasonable and will result in fair and equitable rates if adopted by the Commission. The Oregon Citizens’ Utility Board (“CUB”) also is a party to this docket and has



1 authorized the Stipulating Parties to represent that CUB takes no position  
2 on the Stipulation.

3 **Q. Please describe the Company’s depreciation study filing.**

4 A. On December 17, 2021, pursuant to OAR 860-027-0350, the Company filed  
5 a detailed Depreciation Study that updated NW Natural’s annual  
6 depreciation accrual rates and amounts for accounting and ratemaking  
7 purposes. ORS 757.140 requires utilities to carry a proper and adequate  
8 depreciation account that reflects depreciation rates approved by the  
9 Commission. NW Natural hired Gannett Fleming to perform the  
10 Depreciation Study. The Depreciation Study included descriptions of the  
11 methods used in the estimation of depreciation, the summary of annual  
12 depreciation accrual rates, the statistical support for the life and net salvage  
13 estimates, and the detailed tabulations of annual depreciation  
14 (“depreciation rates”). All assets in the study were included in traditional  
15 FERC classifications of Intangible Plant, Other Production Plant, Natural  
16 Gas Storage and Processing Plant, Transmission, Distribution, and General  
17 Plant assets.

18 **Q. Please describe the results of NW Natural’s Depreciation Study.**

19 A. Based on the Company’s Depreciation Study, the Company proposed  
20 annual book depreciation expense of \$116.2 million when applied to  
21 depreciable plant balances as of December 31, 2020. Based on NW  
22 Natural’s proposed depreciation rates, the difference in depreciation expense  
23 under the depreciation rates currently in effect for NW Natural and the  
24 depreciation expense in the Depreciation Study was an approximately \$8.6  
25 million increase.

1 **Q. Did Staff conduct an independent review of NW Natural's depreciation**  
2 **rates?**

3 A. Yes. Staff's review was independent and comprehensive, as discussed in  
4 the following section.

5 **Q. Did AWEC also conduct an independent review of NW Natural's**  
6 **depreciation rates?**

7 A. Yes. AWEC engaged a third-party consultant to assist in its review of NW  
8 Natural's depreciation rates and engaged in discovery to assist its review.

9 **STAFF'S REVIEW AND ANALYSIS**

10 **Q. Please provide a summary of Staff's review of NW Natural's**  
11 **depreciation rates.**

12 A. Staff reviewed the Company's filing and engaged in settlement discussions  
13 on May 26, 2022.

14 **Q. How did Staff analyze Iowa Curves and Average Service Lives?**

15 A. Depreciation rates are derived from two depreciation parameters: (1) the  
16 combination of Survival Curve<sup>1</sup> and Projection Life (Curve-Life), and (2) Net  
17 Salvage Rates.<sup>2</sup> The Curve-Life parameter is the combination of Survivor  
18 Curve Type with Dispersion Indicator and Projection Life. Staff utilized the  
19 actuarial retirement rate methodology to analyze historical retirement data  
20 to help determine Iowa Curves and average service lives for each  
21 depreciation group. Stipulation Exhibit A shows the depreciation groups for  
22 which the Staff analyses produced differing results from NW Natural, and

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<sup>1</sup> "Survivor curves" means a curve that shows the number of units or cost of a given group which is surviving in service at given ages. The survivor curves were developed by the Engineering Research Institute of Iowa State University. These curves are frequently referred to as "Iowa Curves."

<sup>2</sup> Net salvage is the difference between gross salvage and cost of removal. Net salvage is positive when gross salvage exceeds the cost of removal and reduces the revenue requirement. Conversely, net salvage is negative when cost of removal exceeds gross salvage and increases the revenue requirement.

1 the final position agreed to by the Stipulating Parties in settlement  
2 discussions.

3 **Q. How did Staff analyze curve-lives?**

4 A. Staff began with NW Natural's raw data listed by FERC account; if no data  
5 was available for some accounts, Staff looked at data under the same  
6 account from other gas companies nationwide. Staff then determined the  
7 curve-life statistic based on the minimum sum of the normalized squared  
8 deviations. Normalization was done by dividing each deviation by the  
9 corresponding observed balance. After that, Staff recommended changes  
10 to NW Natural's originally proposed curve-life combination for depreciable  
11 property groups. The recommended changes were made in the average  
12 service life or dispersion curve (or both) for the FERC account categories in  
13 the "Other Production Facilities, Underground Storage Plant, Local Storage  
14 Plant, Transmission Plant, Distribution Plant, and General Plant."

15 **Q. How did Staff analyze net salvage rates?**

16 A. Staff analyzed the net salvage rates submitted by NW Natural, and examined  
17 the asset retirement activities by comparing year-by-year, three-year and five-  
18 year moving averages, as well as the most recent five and ten-year averages.

19 For FERC 300 level accounts, both Staff and NW Natural utilized the  
20 statistical methods of overall averages, and rolling and shrinking band analyses  
21 to study historical data to help estimate net salvage characteristics.

22 **Q. What were the results of Staff's analysis?**

23 A. Staff made multiple account adjustments as part of its analysis, which resulted  
24 in depreciation rates increasing for some accounts and decreasing for others as  
25 compared with those requested in the Company's Depreciation Study. Staff's  
26 review and analysis resulted in a \$106.9 million annual depreciation expense.  
27 Staff arrived at this value by adjusting lowa survivor curves, projected average

1 service lives, and net salvage rates that were different from those used by NW  
2 Natural.

3 **SETTLEMENT AGREEMENT**

4 **Q. Were the Parties able to resolve their differences for each of the**  
5 **accounts where the analyses differed?**

6 A. Yes. On May 26, 2022, Staff, NW Natural, and AWEC participated in a  
7 settlement conference that resulted in agreed upon depreciation rates  
8 described in Exhibit 104 (Adjustment Parameter Comparison). The  
9 depreciation rates agreed to in this Stipulation will result in an annual  
10 depreciation expense of approximately \$106.9 million, resulting in an  
11 approximate \$9.3 million decrease from the annual depreciation expense  
12 proposed in the Depreciation Study. The overall composite depreciation  
13 rate for the total depreciable gas plant is 2.99 percent, compared to NW  
14 Natural's initially proposed 3.26 percent. Stipulation Exhibit A (Settlement  
15 Results) sets forth the detailed account-by-account annual depreciation  
16 rates agreed to as part of the Stipulation.

17 **Q. Did the Stipulating Parties agree on curve-life for Underground**  
18 **Storage Accounts?**

19 A. Yes. For Account 352.00 – Wells, the Stipulating Parties agreed to utilize  
20 a R2-60 curve that reflected all the critical factors for life expectancies for  
21 NW Natural's account. For Account 352.10 – Storage Leaseholds and  
22 Rights, the Stipulating Parties agreed to utilize a R3-65 curve that reflected  
23 all the critical factors for life expectancies for NW Natural's account. For  
24 Account 352.20, Reservoirs, the Stipulating Parties agreed to utilize a R2-  
25 60 curve that reflected all the critical factors for life expectancies for NW  
26 Natural's account. Life estimates for all other Underground Storage

1 Accounts remained unchanged from the Company's filed Depreciation  
2 Study.

3 **Q. Did the Stipulating Parties agree on curve-life for Local Storage**  
4 **Accounts?**

5 A. Yes. For Account 363.30, Compressor Equipment, the Stipulating Parties  
6 agreed to utilize a R1.5-41 curve that reflected all the critical factors for life  
7 expectancies for NW Natural's account. Life estimates for all other Local  
8 Storage Accounts remained unchanged from the Company's filed  
9 Depreciation Study.

10 **Q. Did the Stipulating Parties agree on curve-life for Distribution Plant**  
11 **Accounts?**

12 A. Yes. For Accounts 376.11, Mains – HP 4” and Less, and 376.12, Mains –  
13 HP 4” and Over, the Stipulating Parties agreed to utilize a R3-70 curve that  
14 reflected all the critical factors for life expectancies for NW Natural's  
15 account. For Account 377.00, Compressor Station Equipment, the  
16 Stipulating Parties agreed to utilize a S2-35 curve that reflected all the  
17 critical factors for the life expectancies for NW Natural's account. For  
18 Account 381.00, Meters, the Stipulating Parties agreed to utilize a R1-33  
19 curve that reflected all the critical factors for the life expectancies for NW  
20 Natural's account. For Account 381.20, Meters - ERT, the Stipulating  
21 Parties agreed to utilize a R2-18 curve that reflected all the critical factors  
22 for the life expectancies for NW Natural's account. For Account 382.00,  
23 Meter Installations, the Stipulating Parties agreed to utilize a S0.5-32 curve.  
24 For Account 382.20, Meter Installations - ERT, the Stipulating Parties  
25 agreed to utilize a R2-20 curve that reflected all the critical factors for the  
26 life expectancies for NW Natural's account. For Account 383.00, House  
27 Regulators, the Stipulating Parties agreed to utilize a S2-40 curve that

1 reflected all the critical factors for the life expectancies for NW Natural's  
2 account. Life estimates for all other Distribution Plant Accounts remained  
3 unchanged from the Company's filed Depreciation Study.

4 **Q. Did the Stipulating Parties agree on curve-life for Functions and**  
5 **Accounts not specifically referenced in this testimony?**

6 A. Yes. Curve-life estimates for all Functions and Accounts not specifically  
7 referenced in this testimony remained unchanged from the Company's filed  
8 Depreciation Study.

9 **Q. Did the Stipulating Parties agree on net salvage rates for Transmission**  
10 **Plant Accounts?**

11 A. Yes. The Stipulating Parties agreed to utilize a -30% net salvage rate for  
12 all subaccounts of Account 367.00, Mains. Net salvage rates for all other  
13 Transmission Plant Accounts remained unchanged from the Company's  
14 filed Depreciation Study.

15 **Q. Did the Stipulating Parties agree on net salvage rates for Distribution**  
16 **Plant Accounts?**

17 A. Yes. The Stipulating Parties agreed to utilize a -55% net salvage rate for  
18 Accounts 376.11, Mains – HP 4" and Less, and 376.12, Mains – HP 4" and  
19 Over. For Account 380.00, Services, the Stipulating Parties agreed to utilize  
20 a -99% net salvage rate. Net salvage rates for all other Distribution Plant  
21 Accounts remained unchanged from the Company's filed Depreciation  
22 Study.

23 **Q. Did the Stipulating Parties agree on net salvage rates for General Plant**  
24 **Accounts?**

25 A. Yes. For Account 396.00, Power Operated Equipment, the Stipulating  
26 Parties agreed to utilize a 24% net salvage rate. Net salvage rates for all

1 other General Plant Accounts remained unchanged from the Company's  
2 filed Depreciation Study.

3 **Q. Did the Stipulating Parties agree on net salvage rates for Functions  
4 and Accounts not specifically referenced in this testimony?**

5 A. Yes. Net salvage rates for all Functions and Accounts not specifically  
6 referenced in this testimony remained unchanged from the Company's filed  
7 Depreciation Study.

8 **Q. When will NW Natural implement the new depreciation rates?**

9 A. NW Natural agrees to use the depreciation rates in Stipulation Exhibit A, if  
10 approved by the Commission, as the basis for its depreciation rates in the  
11 Company's pending general rate case proceeding (UG 435), in accordance  
12 with the Multi-Party Stipulation Regarding Revenue Requirement, Rate  
13 Spread and Certain Other Issues filed in that docket on May 31, 2022  
14 ("Multi-Party Stipulation"), upon Commission approval of the Multi-Party  
15 Stipulation. NW Natural will simultaneously update its depreciation rates on  
16 its books when new retail rates are effective following the UG 435 general  
17 rate case.

18 **Q. Does the Stipulation represent a complete resolution of the issues in  
19 this docket?**

20 A. Yes.

21 **JOINT RECOMMENDATION**

22 **Q. What do the Parties recommend regarding the Stipulation?**

23 A. We recommend that the Commission adopt the Stipulation in its entirety.

24 **Q. Does this conclude your testimony?**

25 A. Yes.

Exhibit 101 Spanos Qualifications



**JOHN SPANOS**

**DEPRECIATION EXPERIENCE**

**Q. Please state your name.**

A. My name is John J. Spanos.

**Q. What is your educational background?**

A. I have Bachelor of Science degrees in Industrial Management and Mathematics from Carnegie-Mellon University and a Master of Business Administration from York College.

**Q. Do you belong to any professional societies?**

A. Yes. I am a member and past President of the Society of Depreciation Professionals and a member of the American Gas Association/Edison Electric Institute Industry Accounting Committee.

**Q. Do you hold any special certification as a depreciation expert?**

A. Yes. The Society of Depreciation Professionals has established national standards for depreciation professionals. The Society administers an examination to become certified in this field. I passed the certification exam in September 1997 and was recertified in August 2003, February 2008, January 2013 and February 2018.

**Q. Please outline your experience in the field of depreciation.**

A. In June 1986, I was employed by Gannett Fleming Valuation and Rate Consultants, Inc. as a Depreciation Analyst. During the period from June 1986 through December 1995, I helped prepare numerous depreciation and original cost studies for utility companies in various industries. I helped perform depreciation studies for the following telephone companies: United Telephone of Pennsylvania, United Telephone of New Jersey, and Anchorage Telephone Utility. I helped perform depreciation studies for the following companies in

the railroad industry: Union Pacific Railroad, Burlington Northern Railroad, and Wisconsin Central Transportation Corporation.

I helped perform depreciation studies for the following organizations in the electric utility industry: Chugach Electric Association, The Cincinnati Gas and Electric Company (CG&E), The Union Light, Heat and Power Company (ULH&P), Northwest Territories Power Corporation, and the City of Calgary - Electric System.

I helped perform depreciation studies for the following pipeline companies: TransCanada Pipelines Limited, Trans Mountain Pipe Line Company Ltd., Interprovincial Pipe Line Inc., Nova Gas Transmission Limited and Lakehead Pipeline Company.

I helped perform depreciation studies for the following gas utility companies: Columbia Gas of Pennsylvania, Columbia Gas of Maryland, The Peoples Natural Gas Company, T. W. Phillips Gas & Oil Company, CG&E, ULH&P, Lawrenceburg Gas Company and Penn Fuel Gas, Inc.

I helped perform depreciation studies for the following water utility companies: Indiana-American Water Company, Consumers Pennsylvania Water Company and The York Water Company; and depreciation and original cost studies for Philadelphia Suburban Water Company and Pennsylvania-American Water Company.

In each of the above studies, I assembled and analyzed historical and simulated data, performed field reviews, developed preliminary estimates of service life and net salvage, calculated annual depreciation, and prepared reports for submission to state public utility commissions or federal regulatory agencies. I performed these studies under the general direction of William M. Stout, P.E.

In January 1996, I was assigned to the position of Supervisor of Depreciation Studies. In July 1999, I was promoted to the position of Manager, Depreciation and

Valuation Studies. In December 2000, I was promoted to the position as Vice-President of Gannett Fleming Valuation and Rate Consultants, Inc., in April 2012, I was promoted to the position as Senior Vice President of the Valuation and Rate Division of Gannett Fleming Inc. (now doing business as Gannett Fleming Valuation and Rate Consultants, LLC) and in January of 2019, I was promoted to my present position of President of Gannett Fleming Valuation and Rate Consultants, LLC. In my current position I am responsible for conducting all depreciation, valuation and original cost studies, including the preparation of final exhibits and responses to data requests for submission to the appropriate regulatory bodies.

Since January 1996, I have conducted depreciation studies similar to those previously listed including assignments for Pennsylvania-American Water Company; Aqua Pennsylvania; Kentucky-American Water Company; Virginia-American Water Company; Indiana-American Water Company; Iowa-American Water Company; New Jersey-American Water Company; Hampton Water Works Company; Omaha Public Power District; Enbridge Pipe Line Company; Inc.; Columbia Gas of Virginia, Inc.; Virginia Natural Gas Company National Fuel Gas Distribution Corporation - New York and Pennsylvania Divisions; The City of Bethlehem - Bureau of Water; The City of Coatesville Authority; The City of Lancaster - Bureau of Water; Peoples Energy Corporation; The York Water Company; Public Service Company of Colorado; Enbridge Pipelines; Enbridge Gas Distribution, Inc.; Reliant Energy-HLP; Massachusetts-American Water Company; St. Louis County Water Company; Missouri-American Water Company; Chugach Electric Association; Alliant Energy; Oklahoma Gas & Electric Company; Nevada Power Company; Dominion Virginia Power; NUI-Virginia Gas Companies; Pacific Gas & Electric Company; PSI Energy; NUI - Elizabethtown Gas Company; Cinergy Corporation – CG&E; Cinergy

Corporation – ULH&P; Columbia Gas of Kentucky; South Carolina Electric & Gas Company; Idaho Power Company; El Paso Electric Company; Aqua North Carolina; Aqua Ohio; Aqua Texas, Inc.; Aqua Illinois, Inc.; Ameren Missouri; Central Hudson Gas & Electric; Centennial Pipeline Company; CenterPoint Energy-Arkansas; CenterPoint Energy – Oklahoma; CenterPoint Energy – Entex; CenterPoint Energy - Louisiana; NSTAR – Boston Edison Company; Westar Energy, Inc.; United Water Pennsylvania; PPL Electric Utilities; PPL Gas Utilities; Wisconsin Power & Light Company; TransAlaska Pipeline; Avista Corporation; Northwest Natural Gas; Allegheny Energy Supply, Inc.; Public Service Company of North Carolina; South Jersey Gas Company; Duquesne Light Company; MidAmerican Energy Company; Laclede Gas; Duke Energy Company; E.ON U.S. Services Inc.; Elkton Gas Services; Anchorage Water and Wastewater Utility; Kansas City Power and Light; Duke Energy North Carolina; Duke Energy South Carolina; Monongahela Power Company; Potomac Edison Company; Duke Energy Ohio Gas; Duke Energy Kentucky; Duke Energy Indiana; Duke Energy Progress; Northern Indiana Public Service Company; Tennessee- American Water Company; Columbia Gas of Maryland; Maryland-American Water Company; Bonneville Power Administration; NSTAR Electric and Gas Company; EPCOR Distribution, Inc.; B. C. Gas Utility, Ltd; Entergy Arkansas; Entergy Texas; Entergy Mississippi; Entergy Louisiana; Entergy Gulf States Louisiana; the Borough of Hanover; Louisville Gas and Electric Company; Kentucky Utilities Company; Madison Gas and Electric; Central Maine Power; PEPCO; PacifiCorp; Minnesota Energy Resource Group; Jersey Central Power & Light Company; Cheyenne Light, Fuel and Power Company; United Water Arkansas; Central Vermont Public Service Corporation; Green Mountain Power; Portland General Electric Company; Atlantic City Electric; Nicor Gas Company; Black Hills Power; Black Hills Colorado Gas; Black Hills Energy Arkansas, Inc.; Black Hills Kansas

Gas; Black Hills Service Company; Black Hills Utility Holdings; Public Service Company of Oklahoma; City of Dubois; Peoples Gas Light and Coke Company; North Shore Gas Company; Connecticut Light and Power; New York State Electric and Gas Corporation; Rochester Gas and Electric Corporation; Greater Missouri Operations; Tennessee Valley Authority; Omaha Public Power District; Indianapolis Power & Light Company; Vermont Gas Systems, Inc.; Metropolitan Edison; Pennsylvania Electric; West Penn Power; Pennsylvania Power; PHI Service Company - Delmarva Power and Light; Atmos Energy Corporation; Citizens Energy Group; PSE&G Company; Berkshire Gas Company; Alabama Gas Corporation; Mid-Atlantic Interstate Transmission, LLC; SUEZ Water; WEC Energy Group; Rocky Mountain Natural Gas, LLC; Illinois-American Water Company; Northern Illinois Gas Company; Public Service of New Hampshire and Newtown Artesian Water Company.

My additional duties include determining final life and salvage estimates, conducting field reviews, presenting recommended depreciation rates to management for its consideration and supporting such rates before regulatory bodies.

**Q. Have you submitted testimony to any state utility commission on the subject of utility plant depreciation?**

A. Yes. I have submitted testimony to the Pennsylvania Public Utility Commission; the Commonwealth of Kentucky Public Service Commission; the Public Utilities Commission of Ohio; the Nevada Public Utility Commission; the Public Utilities Board of New Jersey; the Missouri Public Service Commission; the Massachusetts Department of Telecommunications and Energy; the Alberta Energy & Utility Board; the Idaho Public Utility Commission; the Louisiana Public Service Commission; the State Corporation Commission of Kansas; the Oklahoma Corporate Commission; the Public Service

Commission of South Carolina; Railroad Commission of Texas – Gas Services Division; the New York Public Service Commission; Illinois Commerce Commission; the Indiana Utility Regulatory Commission; the California Public Utilities Commission; the Federal Energy Regulatory Commission (“FERC”); the Arkansas Public Service Commission; the Public Utility Commission of Texas; Maryland Public Service Commission; Washington Utilities and Transportation Commission; The Tennessee Regulatory Commission; the Regulatory Commission of Alaska; Minnesota Public Utility Commission; Utah Public Service Commission; District of Columbia Public Service Commission; the Mississippi Public Service Commission; Delaware Public Service Commission; Virginia State Corporation Commission; Colorado Public Utility Commission; Oregon Public Utility Commission; South Dakota Public Utilities Commission; Wisconsin Public Service Commission; Wyoming Public Service Commission; the Public Service Commission of West Virginia; Maine Public Utility Commission; Iowa Utility Board; Connecticut Public Utilities Regulatory Authority; New Mexico Public Regulation Commission; Commonwealth of Massachusetts Department of Public Utilities; Rhode Island Public Utilities Commission and the North Carolina Utilities Commission.

**Q. Have you had any additional education relating to utility plant depreciation?**

A. Yes. I have completed the following courses conducted by Depreciation Programs, Inc.: “Techniques of Life Analysis,” “Techniques of Salvage and Depreciation Analysis,” “Forecasting Life and Salvage,” “Modeling and Life Analysis Using Simulation,” and “Managing a Depreciation Study.” I have also completed the “Introduction to Public Utility Accounting” program conducted by the American Gas Association.

**Q. Does this conclude your qualification statement?**

A. Yes.

## LIST OF CASES IN WHICH JOHN J. SPANOS SUBMITTED TESTIMONY

	<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	<u>Client Utility</u>	<u>Subject</u>
01.	1998	PA PUC	R-00984375	City of Bethlehem – Bureau of Water	Original Cost and Depreciation
02.	1998	PA PUC	R-00984567	City of Lancaster	Original Cost and Depreciation
03.	1999	PA PUC	R-00994605	The York Water Company	Depreciation
04.	2000	D.T.&E.	DTE 00-105	Massachusetts-American Water Company	Depreciation
05.	2001	PA PUC	R-00016114	City of Lancaster	Original Cost and Depreciation
06.	2001	PA PUC	R-00017236	The York Water Company	Depreciation
07.	2001	PA PUC	R-00016339	Pennsylvania-American Water Company	Depreciation
08.	2001	OH PUC	01-1228-GA-AIR	Cinergy Corp – Cincinnati Gas & Elect Company	Depreciation
09.	2001	KY PSC	2001-092	Cinergy Corp – Union Light, Heat & Power Co.	Depreciation
10.	2002	PA PUC	R-00016750	Philadelphia Suburban Water Company	Depreciation
11.	2002	KY PSC	2002-00145	Columbia Gas of Kentucky	Depreciation
12.	2002	NJ BPU	GF02040245	NUI Corporation/Elizabethtown Gas Company	Depreciation
13.	2002	ID PUC	IPC-E-03-7	Idaho Power Company	Depreciation
14.	2003	PA PUC	R-0027975	The York Water Company	Depreciation
15.	2003	IN URC	R-0027975	Cinergy Corp – PSI Energy, Inc.	Depreciation
16.	2003	PA PUC	R-00038304	Pennsylvania-American Water Company	Depreciation
17.	2003	MO PSC	WR-2003-0500	Missouri-American Water Company	Depreciation
18.	2003	FERC	ER03-1274-000	NSTAR-Boston Edison Company	Depreciation
19.	2003	NJ BPU	BPU 03080683	South Jersey Gas Company	Depreciation
20.	2003	NV PUC	03-10001	Nevada Power Company	Depreciation
21.	2003	LA PSC	U-27676	CenterPoint Energy – Arkla	Depreciation
22.	2003	PA PUC	R-00038805	Pennsylvania Suburban Water Company	Depreciation
23.	2004	AB En/Util Bd	1306821	EPCOR Distribution, Inc.	Depreciation
24.	2004	PA PUC	R-00038168	National Fuel Gas Distribution Corp (PA)	Depreciation
25.	2004	PA PUC	R-00049255	PPL Electric Utilities	Depreciation
26.	2004	PA PUC	R-00049165	The York Water Company	Depreciation
27.	2004	OK Corp Cm	PUC 200400187	CenterPoint Energy – Arkla	Depreciation
28.	2004	OH PUC	04-680-EI-AIR	Cinergy Corp. – Cincinnati Gas and Electric Company	Depreciation
29.	2004	RR Com of TX	GUD#	CenterPoint Energy – Entex Gas Services Div.	Depreciation
30.	2004	NY PUC	04-G-1047	National Fuel Gas Distribution Gas (NY)	Depreciation
31.	2004	AR PSC	04-121-U	CenterPoint Energy – Arkla	Depreciation
32.	2005	IL CC	05-ICC-06	North Shore Gas Company	Depreciation
33.	2005	IL CC	05-ICC-06	Peoples Gas Light and Coke Company	Depreciation
34.	2005	KY PSC	2005-00042	Union Light Heat & Power	Depreciation

	<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	<u>Client Utility</u>	<u>Subject</u>
35.	2005	IL CC	05-0308	MidAmerican Energy Company	Depreciation
36.	2005	MO PSC	GF-2005	Laclede Gas Company	Depreciation
37.	2005	KS CC	05-WSEE-981-RTS	Westar Energy	Depreciation
38.	2005	RR Com of TX	GUD #	CenterPoint Energy – Entex Gas Services Div.	Depreciation
39.	2005	US District Court	Cause No. 1:99-CV-1693- LJM/VSS	Cinergy Corporation	Accounting
40.	2005	OK CC	PUD 200500151	Oklahoma Gas and Electric Company	Depreciation
41.	2005	MA Dept Tele- com & Ergy	DTE 05-85	NSTAR	Depreciation
42.	2005	NY PUC	05-E-934/05-G-0935	Central Hudson Gas & Electric Company	Depreciation
43.	2005	AK Reg Com	U-04-102	Chugach Electric Association	Depreciation
44.	2005	CA PUC	A05-12-002	Pacific Gas & Electric	Depreciation
45.	2006	PA PUC	R-00051030	Aqua Pennsylvania, Inc.	Depreciation
46.	2006	PA PUC	R-00051178	T.W. Phillips Gas and Oil Company	Depreciation
47.	2006	NC Util Cm.	G-5, Sub522	Pub. Service Company of North Carolina	Depreciation
48.	2006	PA PUC	R-00051167	City of Lancaster	Depreciation
49.	2006	PA PUC	R00061346	Duquesne Light Company	Depreciation
50.	2006	PA PUC	R-00061322	The York Water Company	Depreciation
51.	2006	PA PUC	R-00051298	PPL GAS Utilities	Depreciation
52.	2006	PUC of TX	32093	CenterPoint Energy – Houston Electric	Depreciation
53.	2006	KY PSC	2006-00172	Duke Energy Kentucky	Depreciation
54.	2006	SC PSC		SCANA	Accounting
55.	2006	AK Reg Com	U-06-6	Municipal Light and Power	Depreciation
56.	2006	DE PSC	06-284	Delmarva Power and Light	Depreciation
57.	2006	IN URC	IURC43081	Indiana American Water Company	Depreciation
58.	2006	AK Reg Com	U-06-134	Chugach Electric Association	Depreciation
59.	2006	MO PSC	WR-2007-0216	Missouri American Water Company	Depreciation
60.	2006	FERC	IS05-82-002, et al	TransAlaska Pipeline	Depreciation
61.	2006	PA PUC	R-00061493	National Fuel Gas Distribution Corp. (PA)	Depreciation
62.	2007	NC Util Com.	E-7 SUB 828	Duke Energy Carolinas, LLC	Depreciation
63.	2007	OH PSC	08-709-EL-AIR	Duke Energy Ohio Gas	Depreciation
64.	2007	PA PUC	R-00072155	PPL Electric Utilities Corporation	Depreciation
65.	2007	KY PSC	2007-00143	Kentucky American Water Company	Depreciation



	<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	<u>Client Utility</u>	<u>Subject</u>
66.	2007	PA PUC	R-00072229	Pennsylvania American Water Company	Depreciation
67.	2007	KY PSC	2007-0008	NiSource – Columbia Gas of Kentucky	Depreciation
68.	2007	NY PSC	07-G-0141	National Fuel Gas Distribution Corp (NY)	Depreciation
69.	2008	AK PSC	U-08-004	Anchorage Water & Wastewater Utility	Depreciation
70.	2008	TN Reg Auth	08-00039	Tennessee-American Water Company	Depreciation
71.	2008	DE PSC	08-96	Artesian Water Company	Depreciation
72.	2008	PA PUC	R-2008-2023067	The York Water Company	Depreciation
73.	2008	KS CC	08-WSEE1-RTS	Westar Energy	Depreciation
74.	2008	IN URC	43526	Northern Indiana Public Service Company	Depreciation
75.	2008	IN URC	43501	Duke Energy Indiana	Depreciation
76.	2008	MD PSC	9159	NiSource – Columbia Gas of Maryland	Depreciation
77.	2008	KY PSC	2008-000251	Kentucky Utilities	Depreciation
78.	2008	KY PSC	2008-000252	Louisville Gas & Electric	Depreciation
79.	2008	PA PUC	2008-20322689	Pennsylvania American Water Co. - Wastewater	Depreciation
80.	2008	NY PSC	08-E887/08-00888	Central Hudson	Depreciation
81.	2008	WV TC	VE-080416/VG-8080417	Avista Corporation	Depreciation
82.	2008	IL CC	ICC-09-166	Peoples Gas, Light and Coke Company	Depreciation
83.	2009	IL CC	ICC-09-167	North Shore Gas Company	Depreciation
84.	2009	DC PSC	1076	Potomac Electric Power Company	Depreciation
85.	2009	KY PSC	2009-00141	NiSource – Columbia Gas of Kentucky	Depreciation
86.	2009	FERC	ER08-1056-002	Entergy Services	Depreciation
87.	2009	PA PUC	R-2009-2097323	Pennsylvania American Water Company	Depreciation
88.	2009	NC Util Cm	E-7, Sub 090	Duke Energy Carolinas, LLC	Depreciation
89.	2009	KY PSC	2009-00202	Duke Energy Kentucky	Depreciation
90.	2009	VA St. CC	PUE-2009-00059	Aqua Virginia, Inc.	Depreciation
91.	2009	PA PUC	2009-2132019	Aqua Pennsylvania, Inc.	Depreciation
92.	2009	MS PSC	Docket No. 2011-UA-183	Entergy Mississippi	Depreciation
93.	2009	AK PSC	09-08-U	Entergy Arkansas	Depreciation
94.	2009	TX PUC	37744	Entergy Texas	Depreciation
95.	2009	TX PUC	37690	El Paso Electric Company	Depreciation
96.	2009	PA PUC	R-2009-2106908	The Borough of Hanover	Depreciation
97.	2009	KS CC	10-KCPE-415-RTS	Kansas City Power & Light	Depreciation
98.	2009	PA PUC	R-2009-	United Water Pennsylvania	Depreciation

	<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	<u>Client Utility</u>	<u>Subject</u>
99.	2009	OH PUC		Aqua Ohio Water Company	Depreciation
100.	2009	WI PSC	3270-DU-103	Madison Gas & Electric Company	Depreciation
101.	2009	MO PSC	WR-2010	Missouri American Water Company	Depreciation
102.	2009	AK Reg Cm	U-09-097	Chugach Electric Association	Depreciation
103.	2010	IN URC	43969	Northern Indiana Public Service Company	Depreciation
104.	2010	WI PSC	6690-DU-104	Wisconsin Public Service Corp.	Depreciation
105.	2010	PA PUC	R-2010-2161694	PPL Electric Utilities Corp.	Depreciation
106.	2010	KY PSC	2010-00036	Kentucky American Water Company	Depreciation
107.	2010	PA PUC	R-2009-2149262	Columbia Gas of Pennsylvania	Depreciation
108.	2010	MO PSC	GR-2010-0171	Laclede Gas Company	Depreciation
109.	2010	SC PSC	2009-489-E	South Carolina Electric & Gas Company	Depreciation
110.	2010	NJ BD OF PU	ER09080664	Atlantic City Electric	Depreciation
111.	2010	VA St. CC	PUE-2010-00001	Virginia American Water Company	Depreciation
112.	2010	PA PUC	R-2010-2157140	The York Water Company	Depreciation
113.	2010	MO PSC	ER-2010-0356	Greater Missouri Operations Company	Depreciation
114.	2010	MO PSC	ER-2010-0355	Kansas City Power and Light	Depreciation
115.	2010	PA PUC	R-2010-2167797	T.W. Phillips Gas and Oil Company	Depreciation
116.	2010	PSC SC	2009-489-E	SCANA – Electric	Depreciation
117.	2010	PA PUC	R-2010-22010702	Peoples Natural Gas, LLC	Depreciation
118.	2010	AK PSC	10-067-U	Oklahoma Gas and Electric Company	Depreciation
119.	2010	IN URC	Cause No. 43894	Northern Indiana Public Serv. Company - NIFL	Depreciation
120.	2010	IN URC	Cause No. 43894	Northern Indiana Public Serv. Co. - Kokomo	Depreciation
121.	2010	PA PUC	R-2010-2166212	Pennsylvania American Water Co. - WW	Depreciation
122.	2010	NC Util Cn.	W-218,SUB310	Aqua North Carolina, Inc.	Depreciation
123.	2011	OH PUC	11-4161-WS-AIR	Ohio American Water Company	Depreciation
124.	2011	MS PSC	EC-123-0082-00	Entergy Mississippi	Depreciation
125.	2011	CO PUC	11AL-387E	Black Hills Colorado	Depreciation
126.	2011	PA PUC	R-2010-2215623	Columbia Gas of Pennsylvania	Depreciation
127.	2011	PA PUC	R-2010-2179103	City of Lancaster – Bureau of Water	Depreciation
128.	2011	IN URC	43114 IGCC 4S	Duke Energy Indiana	Depreciation
129.	2011	FERC	IS11-146-000	Enbridge Pipelines (Southern Lights)	Depreciation
130.	2011	IL CC	11-0217	MidAmerican Energy Corporation	Depreciation
131.	2011	OK CC	201100087	Oklahoma Gas & Electric Company	Depreciation
132.	2011	PA PUC	2011-2232243	Pennsylvania American Water Company	Depreciation

	<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	<u>Client Utility</u>	<u>Subject</u>
133.	2011	FERC	RP11-____-000	Carolina Gas Transmission	Depreciation
134.	2012	WA UTC	UE-120436/UG-120437	Avista Corporation	Depreciation
135.	2012	AK Reg Cm	U-12-009	Chugach Electric Association	Depreciation
136.	2012	MA PUC	DPU 12-25	Columbia Gas of Massachusetts	Depreciation
137.	2012	TX PUC	40094	El Paso Electric Company	Depreciation
138.	2012	ID PUC	IPC-E-12	Idaho Power Company	Depreciation
139.	2012	PA PUC	R-2012-2290597	PPL Electric Utilities	Depreciation
140.	2012	PA PUC	R-2012-2311725	Borough of Hanover – Bureau of Water	Depreciation
141.	2012	KY PSC	2012-00222	Louisville Gas and Electric Company	Depreciation
142.	2012	KY PSC	2012-00221	Kentucky Utilities Company	Depreciation
143.	2012	PA PUC	R-2012-2285985	Peoples Natural Gas Company	Depreciation
144.	2012	DC PSC	Case 1087	Potomac Electric Power Company	Depreciation
145.	2012	OH PSC	12-1682-EL-AIR	Duke Energy Ohio (Electric)	Depreciation
146.	2012	OH PSC	12-1685-GA-AIR	Duke Energy Ohio (Gas)	Depreciation
147.	2012	PA PUC	R-2012-2310366	City of Lancaster – Sewer Fund	Depreciation
148.	2012	PA PUC	R-2012-2321748	Columbia Gas of Pennsylvania	Depreciation
149.	2012	FERC	ER-12-2681-000	ITC Holdings	Depreciation
150.	2012	MO PSC	ER-2012-0174	Kansas City Power and Light	Depreciation
151.	2012	MO PSC	ER-2012-0175	KCPL Greater Missouri Operations Company	Depreciation
152.	2012	MO PSC	GO-2012-0363	Laclede Gas Company	Depreciation
153.	2012	MN PUC	G007,001/D-12-533	Integrlys – MN Energy Resource Group	Depreciation
154.	2012	TX PUC	SOAH 582-14-1051/ TECQ 2013-2007-UCR	Aqua Texas	Depreciation
155.	2012	PA PUC	2012-2336379	York Water Company	Depreciation
156.	2013	NJ BPU	ER12121071	PHI Service Company– Atlantic City Electric	Depreciation
157.	2013	KY PSC	2013-00167	Columbia Gas of Kentucky	Depreciation
158.	2013	VA St CC	2013-00020	Virginia Electric and Power Company	Depreciation
159.	2013	IA Util Bd	2013-0004	MidAmerican Energy Corporation	Depreciation
160.	2013	PA PUC	2013-2355276	Pennsylvania American Water Company	Depreciation
161.	2013	NY PSC	13-E-0030, 13-G-0031, 13-S-0032	Consolidated Edison of New York	Depreciation
162.	2013	PA PUC	2013-2355886	Peoples TWP LLC	Depreciation
163.	2013	TN Reg Auth	12-0504	Tennessee American Water	Depreciation
164.	2013	ME PUC	2013-168	Central Maine Power Company	Depreciation
165.	2013	DC PSC	Case 1103	PHI Service Company – PEPCO	Depreciation

	<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	<u>Client Utility</u>	<u>Subject</u>
166.	2013	WY PSC	2003-ER-13	Cheyenne Light, Fuel and Power Company	Depreciation
167.	2013	FERC	ER13-2428-0000	Kentucky Utilities	Depreciation
168.	2013	FERC	ER13- -0000	MidAmerican Energy Company	Depreciation
169.	2013	FERC	ER13-2410-0000	PPL Utilities	Depreciation
170.	2013	PA PUC	R-2013-2372129	Duquesne Light Company	Depreciation
171.	2013	NJ BPU	ER12111052	Jersey Central Power and Light Company	Depreciation
172.	2013	PA PUC	R-2013-2390244	Bethlehem, City of – Bureau of Water	Depreciation
173.	2013	OK CC	UM 1679	Oklahoma, Public Service Company of	Depreciation
174.	2013	IL CC	13-0500	Nicor Gas Company	Depreciation
175.	2013	WY PSC	20000-427-EA-13	PacifiCorp	Depreciation
176.	2013	UT PSC	13-035-02	PacifiCorp	Depreciation
177.	2013	OR PUC	UM 1647	PacifiCorp	Depreciation
178.	2013	PA PUC	2013-2350509	Dubois, City of	Depreciation
179.	2014	IL CC	14-0224	North Shore Gas Company	Depreciation
180.	2014	FERC	ER14- -0000	Duquesne Light Company	Depreciation
181.	2014	SD PUC	EL14-026	Black Hills Power Company	Depreciation
182.	2014	WY PSC	20002-91-ER-14	Black Hills Power Company	Depreciation
183.	2014	PA PUC	2014-2428304	Borough of Hanover – Municipal Water Works	Depreciation
184.	2014	PA PUC	2014-2406274	Columbia Gas of Pennsylvania	Depreciation
185.	2014	IL CC	14-0225	Peoples Gas Light and Coke Company	Depreciation
186.	2014	MO PSC	ER-2014-0258	Ameren Missouri	Depreciation
187.	2014	KS CC	14-BHCG-502-RTS	Black Hills Service Company	Depreciation
188.	2014	KS CC	14-BHCG-502-RTS	Black Hills Utility Holdings	Depreciation
189.	2014	KS CC	14-BHCG-502-RTS	Black Hills Kansas Gas	Depreciation
190.	2014	PA PUC	2014-2418872	Lancaster, City of – Bureau of Water	Depreciation
191.	2014	WV PSC	14-0701-E-D	First Energy – MonPower/PotomacEdison	Depreciation
192.	2014	VA St CC	PUC-2014-00045	Aqua Virginia	Depreciation
193.	2014	VA St CC	PUE-2013	Virginia American Water Company	Depreciation
194.	2014	OK CC	PUD201400229	Oklahoma Gas and Electric Company	Depreciation
195.	2014	OR PUC	UM1679	Portland General Electric	Depreciation
196.	2014	IN URC	Cause No. 44576	Indianapolis Power & Light	Depreciation
197.	2014	MA DPU	DPU. 14-150	NSTAR Gas	Depreciation
198.	2014	CT PURA	14-05-06	Connecticut Light and Power	Depreciation
199.	2014	MO PSC	ER-2014-0370	Kansas City Power & Light	Depreciation

	<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	<u>Client Utility</u>	<u>Subject</u>
200.	2014	KY PSC	2014-00371	Kentucky Utilities Company	Depreciation
201.	2014	KY PSC	2014-00372	Louisville Gas and Electric Company	Depreciation
202.	2015	PA PUC	R-2015-2462723	United Water Pennsylvania Inc.	Depreciation
203.	2015	PA PUC	R-2015-2468056	NiSource - Columbia Gas of Pennsylvania	Depreciation
204.	2015	NY PSC	15-E-0283/15-G-0284	New York State Electric and Gas Corporation	Depreciation
205.	2015	NY PSC	15-E-0285/15-G-0286	Rochester Gas and Electric Corporation	Depreciation
206.	2015	MO PSC	WR-2015-0301/SR-2015-0302	Missouri American Water Company	Depreciation
207.	2015	OK CC	PUD 201500208	Oklahoma, Public Service Company of	Depreciation
208.	2015	WV PSC	15-0676-W-42T	West Virginia American Water Company	Depreciation
209.	2015	PA PUC	2015-2469275	PPL Electric Utilities	Depreciation
210.	2015	IN URC	Cause No. 44688	Northern Indiana Public Service Company	Depreciation
211.	2015	OH PSC	14-1929-EL-RDR	First Energy-Ohio Edison/Cleveland Electric/ Toledo Edison	Depreciation
212.	2015	NM PRC	15-00127-UT	El Paso Electric	Depreciation
213.	2015	TX PUC	PUC-44941; SOAH 473-15-5257	El Paso Electric	Depreciation
214.	2015	WI PSC	3270-DU-104	Madison Gas and Electric Company	Depreciation
215.	2015	OK CC	PUD 201500273	Oklahoma Gas and Electric	Depreciation
216.	2015	KY PSC	Doc. No. 2015-00418	Kentucky American Water Company	Depreciation
217.	2015	NC UC	Doc. No. G-5, Sub 565	Public Service Company of North Carolina	Depreciation
218.	2016	WA UTC	Docket UE-17	Puget Sound Energy	Depreciation
219.	2016	NY PSC	Case No. 16-W-0130	SUEZ Water New York, Inc.	Depreciation
220.	2016	MO PSC	ER-2016-0156	KCPL – Greater Missouri	Depreciation
221.	2016	WI PSC		Wisconsin Public Service Corporation	Depreciation
222.	2016	KY PSC	Case No. 2016-00026	Kentucky Utilities Company	Depreciation
223.	2016	KY PSC	Case No. 2016-00027	Louisville Gas and Electric Company	Depreciation
224.	2016	OH PUC	Case No. 16-0907-WW-AIR	Aqua Ohio	Depreciation
225.	2016	MD PSC	Case 9417	NiSource - Columbia Gas of Maryland	Depreciation
226.	2016	KY PSC	2016-00162	Columbia Gas of Kentucky	Depreciation
227.	2016	DE PSC	16-0649	Delmarva Power and Light Company – Electric	Depreciation
228.	2016	DE PSC	16-0650	Delmarva Power and Light Company – Gas	Depreciation
229.	2016	NY PSC	Case 16-G-0257	National Fuel Gas Distribution Corp – NY Div	Depreciation
230.	2016	PA PUC	R-2016-2537349	Metropolitan Edison Company	Depreciation
231.	2016	PA PUC	R-2016-2537352	Pennsylvania Electric Company	Depreciation
232.	2016	PA PUC	R-2016-2537355	Pennsylvania Power Company	Depreciation

	<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	<u>Client Utility</u>	<u>Subject</u>
233.	2016	PA PUC	R-2016-2537359	West Penn Power Company	Depreciation
234.	2016	PA PUC	R-2016-2529660	NiSource - Columbia Gas of PA	Depreciation
235.	2016	KY PSC	Case No. 2016-00063	Kentucky Utilities / Louisville Gas & Electric Co	Depreciation
236.	2016	MO PSC	ER-2016-0285	KCPL Missouri	Depreciation
237.	2016	AR PSC	16-052-U	Oklahoma Gas & Electric Co	Depreciation
238.	2016	PSCW	6680-DU-104	Wisconsin Power and Light	Depreciation
239.	2016	ID PUC	IPC-E-16-23	Idaho Power Company	Depreciation
240.	2016	OR PUC	UM1801	Idaho Power Company	Depreciation
241.	2016	ILL CC	16-	MidAmerican Energy Company	Depreciation
242.	2016	KY PSC	Case No. 2016-00370	Kentucky Utilities Company	Depreciation
243.	2016	KY PSC	Case No. 2016-00371	Louisville Gas and Electric Company	Depreciation
244.	2016	IN URC	Cause No. 45029	Indianapolis Power & Light	Depreciation
245.	2016	AL RC	U-16-081	Chugach Electric Association	Depreciation
246.	2017	MA DPU	D.P.U. 17-05	NSTAR Electric Company and Western Massachusetts Electric Company	Depreciation
247.	2017	TX PUC	PUC-26831, SOAH 973-17-2686	El Paso Electric Company	Depreciation
248.	2017	WA UTC	UE-17033 and UG-170034	Puget Sound Energy	Depreciation
249.	2017	OH PUC	Case No. 17-0032-EL-AIR	Duke Energy Ohio	Depreciation
250.	2017	VA SCC	Case No. PUE-2016-00413	Virginia Natural Gas, Inc.	Depreciation
251.	2017	OK CC	Case No. PUD201700151	Public Service Company of Oklahoma	Depreciation
252.	2017	MD PSC	Case No. 9447	Columbia Gas of Maryland	Depreciation
253.	2017	NC UC	Docket No. E-2, Sub 1142	Duke Energy Progress	Depreciation
254.	2017	VA SCC	Case No. PUR-2017-00090	Dominion Virginia Electric and Power Company	Depreciation
255.	2017	FERC	ER17-1162	MidAmerican Energy Company	Depreciation
256.	2017	PA PUC	R-2017-2595853	Pennsylvania American Water Company	Depreciation
257.	2017	OR PUC	UM1809	Portland General Electric	Depreciation
258.	2017	FERC	ER17-217-000	Jersey Central Power & Light	Depreciation
259.	2017	FERC	ER17-211-000	Mid-Atlantic Interstate Transmission, LLC	Depreciation
260.	2017	MN PUC	Docket No. G007/D-17-442	Minnesota Energy Resources Corporation	Depreciation
261.	2017	IL CC	Docket No. 17-0124	Northern Illinois Gas Company	Depreciation
262.	2017	OR PUC	UM1808	Northwest Natural Gas Company	Depreciation
263.	2017	NY PSC	Case No. 17-W-0528	SUEZ Water Owego-Nichols	Depreciation
264.	2017	MO PSC	GR-2017-0215	Laclede Gas Company	Depreciation
265.	2017	MO PSC	GR-2017-0216	Missouri Gas Energy	Depreciation

	<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	<u>Client Utility</u>	<u>Subject</u>
266.	2017	ILL CC	Docket No. 17-0337	Illinois-American Water Company	Depreciation
267.	2017	FERC	Docket No. ER18-22-000	PPL Electric Utilities Corporation	Depreciation
268.	2017	IN URC	Cause No. 44988	Northern Indiana Public Service Company	Depreciation
269.	2017	NJ BPU	BPU Docket No. WR17090985	New Jersey American Water Company, Inc.	Depreciation
270.	2017	RI PUC	Docket No. 4800	SUEZ Water Rhode Island	Depreciation
271.	2017	OK CC	Cause No. PUD 201700496	Oklahoma Gas and Electric Company	Depreciation
272.	2017	NJ BPU	ER18010029 & GR18010030	Public Service Electric and Gas Company	Depreciation
273.	2017	NC Util Com.	Docket No. E-7, SUB 1146	Duke Energy Carolinas, LLC	Depreciation
274.	2017	KY PSC	Case No. 2017-00321	Duke Energy Kentucky, Inc.	Depreciation
275.	2017	MA DPU	D.P.U. 18-40	Berkshire Gas Company	Depreciation
276.	2018	IN IURC	Cause No. 44992	Indiana-American Water Company, Inc.	Depreciation
277.	2018	IN IURC	Cause No. 45029	Indianapolis Power and Light	Depreciation
278.	2018	NC Util Com.	Docket No. W-218, Sub 497	Aqua North Carolina, Inc.	Depreciation
279.	2018	PA PUC	Docket No. R-2018-2647577	NiSource - Columbia Gas of Pennsylvania, Inc.	Depreciation
280.	2018	OR PUC	Docket UM 1933	Avista Corporation	Depreciation
281.	2018	WA UTC	Docket No. UE-108167	Avista Corporation	Depreciation
282.	2018	ID PUC	AVU-E-18-03, AVU-G-18-02	Avista Corporation	Depreciation
283.	2018	IN URC	Cause No. 45039	Citizens Energy Group	Depreciation
284.	2018	FERC	Docket No. ER18-	Duke Energy Progress	Depreciation
285.	2018	PA PUC	Docket No. R-2018-3000124	Duquesne Light Company	Depreciation
286.	2018	MD PSC	Case No. 948	NiSource - Columbia Gas of Maryland	Depreciation
287.	2018	MA DPU	D.P.U. 18-45	NiSource - Columbia Gas of Massachusetts	Depreciation
288.	2018	OH PUC	Case No. 18-0299-GA-ALT	Vectren Energy Delivery of Ohio	Depreciation
289.	2018	PA PUC	Docket No. R-2018-3000834	SUEZ Water Pennsylvania Inc.	Depreciation
290.	2018	MD PSC	Case No. 9847	Maryland-American Water Company	Depreciation
291.	2018	PA PUC	Docket No. R-2018-3000019	The York Water Company	Depreciation
292.	2018	FERC	ER-18-2231-000	Duke Energy Carolinas, LLC	Depreciation
293.	2018	KY PSC	Case No. 2018-00261	Duke Energy Kentucky, Inc.	Depreciation
294.	2018	NJ BPU	BPU Docket No. WR18050593	SUEZ Water New Jersey	Depreciation
295.	2018	WA UTC	Docket No. UE-180778	PacifiCorp	Depreciation
296.	2018	UT PSC	Docket No. 18-035-36	PacifiCorp	Depreciation
297.	2018	OR PUC	Docket No. UM-1968	PacifiCorp	Depreciation
298.	2018	ID PUC	Case No. PAC-E-18-08	PacifiCorp	Depreciation
299.	2018	WY PSC	20000-539-EA-18	PacifiCorp	Depreciation
300.	2018	PA PUC	Docket No. R-2018-3003068	Aqua Pennsylvania, Inc.	Depreciation

	<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	<u>Client Utility</u>	<u>Subject</u>
301.	2018	IL CC	Docket No. 18-1467	Aqua Illinois, Inc.	Depreciation
302.	2018	KY PSC	Case No. 2018-00294	Louisville Gas & Electric Company	Depreciation
303.	2018	KY PSC	Case No. 2018-00295	Kentucky Utilities Company	Depreciation
304.	2018	IN URC	Cause No. 45159	Northern Indiana Public Service Company	Depreciation
305.	2018	VA SCC	Case No. PUR-2019-00175	Virginia American Water Company	Depreciation
306.	2019	PA PUC	Docket No. R-2018-3006818	Peoples Natural Gas Company, LLC	Depreciation
307.	2019	OK CC	Cause No. PUD201800140	Oklahoma Gas and Electric Company	Depreciation
308.	2019	MD PSC	Case No. 9490	FirstEnergy – Potomac Edison	Depreciation
309.	2019	SC PSC	Docket No. 2018-318-E	Duke Energy Progress	Depreciation
310.	2019	SC PSC	Docket No. 2018-319-E	Duke Energy Carolinas	Depreciation
311.	2019	DE PSC	DE 19-057	Public Service of New Hampshire	Depreciation
312.	2019	NY PSC	Case No. 19-W-0168 & 19-W-0269	SUEZ Water New York	Depreciation
313.	2019	PA PUC	Docket No. R-2019-3006904	Newtown Artesian Water Company	Depreciation
314.	2019	MO PSC	ER-2019-0335	Ameren Missouri	Depreciation
315.	2019	MO PSC	EC-2019-0200	KCP&L Greater Missouri Operations Company	Depreciation
316.	2019	MN DOC	G011/D-19-377	Minnesota Energy Resource Corp.	Depreciation
317.	2019	NY PSC	Case 19-E-0378 & 19-G-0379	New York State Electric and Gas Corporation	Depreciation
318.	2019	NY PSC	Case 19-E-0380 & 19-G-0381	Rochester Gas and Electric Corporation	Depreciation
319.	2019	WA UTC	Docket UE-190529 / UG-190530	Puget Sound Energy	Depreciation
320.	2019	PA PUC	Docket No. R-2019-3010955	City of Lancaster	Depreciation
321.	2019	IURC	Cause No. 45253	Duke Energy Indiana	Depreciation
322.	2019	KY PSC	Case No. 2019-00271	Duke Energy Kentucky, Inc.	Depreciation
323.	2019	OH PUC	Case No. 18-1720-GA-AIR	Northeast Ohio Natural Gas Corp	Depreciation
324.	2019	NC Util. Com.	Docket No. E-2, Sub 1219	Duke Energy Carolinas	Depreciation
325.	2019	FERC	Docket No. ER20-277-000	Jersey Central Power & Light Company	Depreciation
326.	2019	MA DPU	D.P.U. 19-120	NSTAR Gas Company	Depreciation
327.	2019	SC PSC	Docket No. 2019-290-WS	Blue Granite Water Company	Depreciation
328.	2019	NC Util. Com.	Docket No. E-2, Sub 1219	Duke Energy Progress	Depreciation
329.	2019	MD PSC	Case No. 9609	NiSource Columbia Gas of Maryland, Inc.	Depreciation
330.	2020	NJ BPU	Docket No. ER20020146	Jersey Central Power & Light Company	Depreciation
331.	2020	PA PUC	Docket No. R-2020-3018835	NiSource - Columbia Gas of Pennsylvania, Inc.	Depreciation
332.	2020	PA PUC	Docket No. R-2020-3019369	Pennsylvania-American Water Company	Depreciation
333.	2020	PA PUC	Docket No. R-2020-3019371	Pennsylvania-American Water Company	Depreciation
334.	2020	MO PSC	GO-2018-0309, GO-2018-0310	Spire Missouri, Inc.	Depreciation
335.	2020	NM PRC	Case No. 20-00104-UT	El Paso Electric Company	Depreciation
336.	2020	MD PSC	Case No. 9644	Columbia Gas of Maryland, Inc.	Depreciation
337.	2020	MO PSC	GO-2018-0309, GO-2018-0310	Spire Missouri, Inc.	Depreciation
338.	2020	VA St CC	Case No. PUR-2020-00095	Virginia Natural Gas Company	Depreciation



	<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	<u>Client Utility</u>	<u>Subject</u>
339.	2020	SC PSC	Docket No. 2020-125-E	Dominion Energy South Carolina, Inc.	Depreciation
340.	2020	WV PSC	Case No. 20-0745-G-D	Hope Gas, Inc. d/b/a Dominion Energy West Virginia	Depreciation
341.	2020	VA St CC	Case No. PUR-2020-00106	Aqua Virginia, Inc.	Depreciation
342.	2020	PA PUC	Docket No. R-2020-3020256	City of Bethlehem – Bureau of Water	Depreciation
343.	2020	NE PSC	Docket No. NG-109	Black Hills Nebraska	Depreciation
344.	2020	NY PSC	Case No. 20-E-0428 & 20-G-0429	Central Hudson Gas & Electric Corporation	Depreciation
345.	2020	FERC	ER20-598	Duke Energy Indiana	Depreciation
346.	2020	FERC	ER20-855	Northern Indiana Public Service Company	Depreciation
347.	2020	OR PSC	UE 374	Pacificorp	Depreciation
348.	2020	MD PSC	Case No. 9490 Phase II	Potomac Edison – Maryland	Depreciation
349.	2020	IN URC	Case No. 45447	Southern Indiana Gas and Electric Company	Depreciation
350.	2020	IN URC	IURC Cause No. 45468	Indiana Gas Company, Inc. d/b/a Vectren Energy Delivery of	Depreciation
351.	2020	KY PSC	Case No. 2020-00349	Kentucky Utilities Company	Depreciation
352.	2020	KY PSC	Case No. 2020-00350	Louisville Gas and Electric Company	Depreciation
353.	2020	FERC	Docket No. ER21- 000	South FirstEnergy Operating Companies	Depreciation
354.	2020	OH PUC	Case Nos 20-1651-EL-AIR, 20-1652-EL-AAM & 20-1653-EL-ATA	Dayton Power and Light Company	Depreciation
355.	2020	OR PSC	UG 388	Northwest Natural Gas Company	Depreciation
356.	2020	MO PSC	Case No. GR-2021-0241	Ameren Missouri Gas	Depreciation
357.	2021	KY PSC	Case No. 2021-00103	East Kentucky Power Cooperative	Depreciation
358.	2021	MPUC	Docket No. 2021-00024	Bangor Natural Gas	Depreciation
359.	2021	PA PUC	Docket No. R-2021-3024296	Columbia Gas of Pennsylvania, Inc.	Depreciation
360.	2021	NC Util. Com.	Doc. No. G-5, Sub 632	Public Service of North Carolina	Depreciation
361.	2021	MO PSC	ER-2021-0240	Ameren Missouri	Depreciation
362.	2021	PA PUC	Docket No. R-2021-3024750	Duquesne Light Company	Depreciation
363.	2021	KS PSC	21-BHCG-418-RTS	Black Hills Kansas Gas	Depreciation
364.	2021	KY PSC	Case No. 2021-00190	Duke Energy Kentucky	Depreciation
365.	2021	OR PSC	Docket UM 2152	Portland General Electric	Depreciation
366.	2021	ILL CC	Docket No. 20-0810	North Shore Gas Company	Depreciation
367.	2021	FERC	ER21-1939-000	Duke Energy Progress	Depreciation
368.	2021	FERC	ER21-1940-000	Duke Energy Carolina	Depreciation
369.	2021	KY PSC	Case No. 2021-00183	NiSource Columbia Gas of Kentucky	Depreciation
370.	2021	MD PSC	Case No. 9664	NiSource Columbia Gas of Maryland	Depreciation
371.	2021	OH PUC	Case No. 21-0596-ST-AIR	Aqua Ohio	Depreciation
372.	2021	PA PUC	Docket No. R-2021-3026116	Hanover Borough Municipal Water Works	Depreciation
373.	2021	OR PSC	UM-2180	Idaho Power Company	Depreciation
374.	2021	ID PUC	Case No. IPC-E-21-18	Idaho Power Company	Depreciation
375.	2021	WPSC	6690-DU-104	Wisconsin Public Service Company	Depreciation

	<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	<u>Client Utility</u>	<u>Subject</u>
376.	2021	PAPUC	Docket No. R-2021-3026116	Borough of Hanover	Depreciation
377.	2021	OH PUC	Case No. 21-637-GA-AIR; Case No. 21-638-GA-ALT; Case No. 21-639-GA-UNC; Case No. 21-640-GA-AAM	NiSource Columbia Gas of Ohio	Depreciation
378.	2021	TX PUC	Texas PUC Docket No. 52195; SOHA Docket No. 473-21-2606	El Paso Electric	Depreciation
379.	2021	MO PSC	Case No. GR.2021-0108	Spire Missouri	Depreciation
380.	2021	WV PSC	Case No. 21-0215-WS-P	West Virginia American Water Company	Depreciation
381.	2021	FERC	ER21-2736	Duke Energy Carolinas	Depreciation
382.	2021	FERC	ER21-2737	Duke Energy Progress	Depreciation
383.	2021	IN URC	Cause #45621	Northern Indiana Public Service Company	Depreciation
384.	2021	PA PUC	Docket No. R-2021-3026682	City of Lancaster	Depreciation
385.	2021	OH PUC	Case No. 21-887-EL-AIR; Case No. 21-888-EL-ATA; Case No. 889-EL-AAM	Duke Energy Ohio	Depreciation
386.	2021	AK PSC	Docket No. 21-097-U	Black Hills Energy Arkansas, Inc.	Depreciation
387.	2021	OK CC	Cause No. PUD202100164	Oklahoma Gas & Electric	Depreciation
388.	2021	FERC	Case ER-22-392-001	El Paso Electric	Depreciation
389.	2021	FERC	Case ER-21-XXX	MidAmerican Electric	Depreciation
390.	2021	PA PUC	Docket Nos. R-2021-3027385, R-2021-3027386	Aqua Pennsylvania, Inc. Aqua Pennsylvania Wastewater, Inc.	Depreciation
391.	2022	FERC	Case ER-22-282-000	El Paso Electric	Depreciation
392.	2022	ILL CC	Docket No. 22-0154	MidAmerican Gas	Depreciation
393.	2022	MO PSC	Case No. ER-2022-0129	Evergy Metro	Depreciation
394.	2022	MO PSC	Case No. ER-2022-0130	Evergy Missouri West	Depreciation
395.	2022	PA PUC	Docket No. R-2022-3031211	NiSource Columbia Gas of Pennsylvania, Inc.	Depreciation
396.	2022	MA DPU	D.P.U. 22-20	The Berkshire Gas Company	Depreciation
397.	2022	PA PUC	R-2022-3031672; R-2022-3031673	Pennsylvania-American Water Company	Depreciation
398.	2022	SD PUC	Docket No. NG22-	MidAmerican Gas	Depreciation
399.	2022	MD PSC	Case No. 9680	NiSource Columbia Gas of Maryland	Depreciation
400.	2022	WYPSC	Docket No. 20003-214-ER-22	Black Hills Energy – Cheyenne Light, Fuel and Power Company	Depreciation
401.	2022	MA DPU	D.P.U. 22.22	NSTAR Electric Company d/b/a Eversource Energy	Depreciation
402.	2022	NC Util Com	Docket No. W-218, Sub 573	Aqua North Carolina, Inc.	Depreciation

### WITNESS QUALIFICATIONS STATEMENT

NAME: Ming Peng  
EMPLOYER: Public Utility Commission of Oregon  
TITLE: Senior Econometrician  
Energy Rates, Finance, and Audit Division  
ADDRESS: 201 High Street SE, Suite 100  
Salem, OR 97301

#### EDUCATION & TRAINING:

Master of Science, Applied Economics  
University of Idaho, Moscow  
  
Bachelor of Science, Statistics  
People's University of China, Beijing  
  
Certified Rate of Return Analyst in 2002  
Society of Utility and Regulatory Financial Analysts  
  
Depreciation Studies  
The Society of Depreciation Professionals  
  
NARUC Annual Regulatory Studies Program  
Michigan State University, East Lansing  
  
400+ Credit Hours on 30+ Training Topics in the Public Utility  
Industry

EXPERIENCE: January 11, 1999 – Present  
Public Utility Commission of Oregon

I have been employed by the Public Utility Commission of Oregon (Commission or OPUC) for 23 years. My roles include:

**Expert Witness, Case Manager, Principal Analyst, Econometrician, Economist, Utility Analyst, and Policy Analyst:**

I have testified in various formal state hearings and performed numerous analyses including economic, financial, statistical, mathematical, marketing, and policy analyses in the public utility industry.

**Principal Analyst and Case Manager, Settlement  
Lead/Negotiator for Depreciation Ratemaking:**

I have served as a Principal Analyst and Case Manager for the determination of Energy Property Depreciation Rates (ORS 757.140) for the past 14 years. In this role, I've had a strong focus on Depreciation Rate Determination (fixed cost allocation, and capital recovery). I was also a Principal Analyst and Case Manager for the determination of Energy Property Depreciation Rates (ORS 757.140) during this time period.

In this position, I investigated, analyzed, and calculated energy asset retirement cost and impact—as well as power plant decommissioning cost and impact—on customer rates. I reviewed, calculated, and analyzed fixed asset depreciation and proposed depreciation parameters for FERC accounts on Generation, Transmission, Distribution, General, and Coal Mining Plants. The energy sources I have worked on are Steam/Coal, Hydraulic, Natural Gas, Wind, Solar, and Geothermal.

My analyses of “Power-Plant-Shutdown” activities (accelerated plant retirement, and decommissioning cost recovery) include the following cases:

1. PGE closes Boardman Coal-fired plant (UM 1679 & UE 215).
2. PacifiCorp closes Carbon Coal Plant in Utah (UE 246).
3. Multi-state PacifiCorp Klamath Hydro Dam Removal Cost recovery for (1) J. C. Boyle Dam, (2) Copco 1 Dam, (3) Copco 2 Dam, and (4) Iron Gate Dam removal under the ORS 757.734 – Recovery of investment in Klamath River dams in OPUC UE 219.
4. Idaho Power Valmy Coal-Fired power plant shutdown (UE 316).
5. PGE Colstrip Coal-Fired power plant shutdown (UM 1809).

I conduct case investigations and analyses on Utility's filings, make rate adjustments, lead settlement negotiation, prepare testimony, and appear on behalf of the Commission. The energy companies I work with are: (1) PacifiCorp (serves six states), (2) Portland General Electric (PGE), (3) Northwest Natural Gas (NWN), (4) Idaho Power, (5) Avista Corp (Washington), and (6) Cascade Gas (CNG, Montana).

### **Lead Analyst and Case Manager on Financial Dockets:**

Prior to my current position, I was a Lead Analyst and Case Manager for cost of debt capital for nine years. I reviewed market risks, derivatives and hedging, debt issuance, and stock flotation. My analysis directly informed utility and energy policy.

I advised the Commission on over 60 financial dockets. The Commission incorporated all of my recommendations into final orders.

I was certified by the Society of Utility and Regulatory Financial Analysts as a Certified Rate of Return Analyst in 2002.

### **Public Utility & Policy Analyst:**

Rulemaking: I have formulated energy regulation rules for utility performance incentives and cost-of-service regulation.

Energy Utility Merger & Acquisition: I have testified in formal state hearings involving utility mergers and acquisitions. I conducted Acquisition Premiums and Credit Risk Analysis, and I testified on behalf of the Commission in MidAmerican Energy Company's application to purchase PacifiCorp. I also reviewed Scottish Power's earlier purchase of PacifiCorp and PGE's emergence from Enron after the Enron bankruptcy.

Integrated Resource Planning (IRP, Least Cost Planning): I provided comments to the Commission for decision making on Boardman to Hemingway (B2H), a 500-kV transmission power line, which included a cost and benefit list, a pros and cons list, alternatives, and the relevant legal risks. I also provided comments on utility's IRPs, such as total cost for power generation, power capacity (MW) replacement cost, avoided cost for free fuel, and emission trading cost.

Clean Energy – Dollar Impact on Customer Rates: I analyzed and calculated the rate impact and comparative advantage of clean energy. I built the portfolio optimization models to analyze the coal-fired generating capacity replacement.

General Rate Cases: I have been a part of almost every energy rate case since I joined the OPUC on January 11, 1999. Historically, my review included fuel price forecasting, property sales, load forecasting, weather normalizations, cost of debt,

and capital structures. Currently, my reviews are focused on depreciation and reserve, and AFUDC Capitalization Policy.

Survey Sampling Design: Results of my statistical sampling design and sampling procedures are incorporated into my revenue requirement testimony in Commission Docket No. UM 1288.

Auditing, Interest Rate, Late Payment: I audited cost of capital and financial components. My survey report and analyses are published annually for Oregon (UM 779).

Survey for Market Competition & Economic Policy: I conducted and wrote the report on Telecommunications, “Market Competition and Economic Policy Survey Analysis” for House Bill 2577. This report has been published on the OPUC website annually for 15 years.

Mentor in the International Confederation of Energy Regulators: I was selected to act as a mentor in the ICER (International Confederation of Energy Regulators) Women in Energy (ICER WIE) pilot mentoring program. My “Mentoring Topics” focus on Incentive Regulation; Rate and Economic Impacts of “Cost-of-Service” regulation in the U.S.; “Price-Cap Performance Based Regulation” in Europe; Cost of Capital, Energy Demand, and Price Forecasting Modeling; Least Cost Planning; Regulatory Policy; and Renewable Energy issues within regulated rate structures.

# **MW ANALYTICS**

Energy & Utility Consulting

**Brad Mullins**  
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## **ABOUT**

MW Analytics is the professional consulting practice of Brad Mullins, a consultant and expert witness that represents utility customers in regulatory proceedings before state utility commissions throughout the Western United States. Brad has sponsored expert witness testimony in over 90 regulatory proceeding encompassing a variety of subject matters, including revenue requirement, regulatory accounting, rate development, and new resource additions. Brad has also assisted his clients through informal regulatory, legislative and energy policy matters. In addition to providing regulatory services, MW Analytics also provides advisory, energy marketing and other energy consulting services.

## **PRACTICE AREAS**

MW Analytics has experience representing customer interests in litigated and informal regulatory proceedings, including the following subject areas:

- Revenue Requirement
- Power Cost Modeling
- Tax Provisions and Tax Reform
- Capital Additions and Forecasting
- Regulatory Accounting
- Depreciation Studies
- Pole Attachments
- Integrated Resource Planning
- Avoided Cost Calculations
- Utility Plant Retirements

## **EDUCATION AND WORK EXPERIENCE**

Brad has a Master of Accounting degree from the University of Utah. After obtaining his master's degree, Brad worked at Deloitte Tax in San Jose, California, where he was responsible for preparing corporate tax returns for multinational corporate clients and partnership returns for hedge fund clients. Brad was later promoted to a Tax Senior position in a national tax practice specializing research and development tax credit studies. Following Deloitte, Brad worked at PacifiCorp Energy, as an analyst involved in power cost modeling and forecasting. At PacifiCorp Brad was responsible for preparing power cost forecasts and supporting testimony for regulatory filings, preparing annual power cost deferral filings, and developing qualifying facility avoided cost calculations.

## **REGULATORY APPEARANCES**

Brad has sponsored expert witness testimony in the following regulatory proceedings:

<b>Docket</b>	<b>Party</b>	<b>Topics</b>
<u>In re PacifiCorp d.b.a Pacific Power, 2023 Transition Adjustment Mechanism, Or.PUC UE 399.</u>	Alliance of Western Energy Consumers	Revenue Requirement
<u>In re the Joint Application of Nevada Power Company d/b/a NV Energy and Sierra Pacific Power Company d/b/a NV Energy for approval of the cost recovery of the regulatory assets relating to the development and implementation of their Joint Natural Disaster Protection Plan., PUC NV. Docket No. 22-03006.</u>	Alliance of Western Energy Consumers	Single-Issue Rate Filing
<u>In re PacifiCorp d.b.a. Pacific Power, 2023 Transition Adjustment Mechanism, Or.PUC Docket No. UE 399.</u>	Alliance of Western Energy Consumers	Power Cost Modeling

<b>Docket</b>	<b>Party</b>	<b>Topics</b>
<u>In re Cascade Natural Gas Corporation, Request for a General Rate Revision, Wa.UTC Docket No. UG-210755</u>	Alliance of Western Energy Consumers	Revenue Requirement / Cost of Service
<u>In re Northwest Natural Gas Company, dba NW Natural, Request for A General Rate Revision, Or.PUC. Docket No. UG 435</u>	Alliance of Western Energy Consumers	Revenue Requirement / Cost of Service
<u>In re Formal Complaint of Tree Top Inc. against Cascade Natural Gas Corporation, Wa.UTC Docket No. UG-210745</u>	Tree Top, Inc.	Overrun Entitlement
<u>In re Northwest Natural Gas Company, dba NW Natural, Request for Approval of an Affiliated Interest Agreement with Lexington Renewables, LLC, Or.PUC. Docket No. UI 451.</u>	Alliance of Western Energy Consumers	Affiliated Interest
<u>In re Avista Corporation, Request for a General Rate Revision, Or.PUC Docket No. UG 433</u>	Alliance of Western Energy Consumers	Revenue Requirement / Cost of Service
<u>In re PacifiCorp Power Cost Only Rate Case, Wa.UTC Docket No. UE-210402.</u>	Alliance of Western Energy Consumers	Power Cost Modeling
<u>In re PacifiCorp Limited Issue Rate Filing, Wa.UTC Docket No. UE-210532.</u>	Alliance of Western Energy Consumers	Revenue Requirement / Settlement
<u>In re the Application of Rocky Mountain Power for Authority to Increase Its Rates and Charges in Idaho and Approval of Proposed Electric Service Schedules and Regulations, Id.PUC Case No. PAC-E-21-07.</u>	PacifiCorp Idaho Industrial Customers	Revenue Requirement / Settlement
<u>In re Portland General Electric, Request for a General Rate Revision, Or.PUC Docket No. UE 394.</u>	Alliance of Western Energy Consumers	Power Cost Modeling
<u>In re Joint Application of Nevada Power Company d/b/a NV Energy and Sierra Pacific Power Company d/b/a NV Energy for approval of their Economic Recovery Transportation Electrification Plan for the period 2022-2024, PUC Nv. Docket No. 21-09004</u>	Nevada Resort Association	Transportation Electrification
<u>In re PacifiCorp, dba Pacific Power, 2020 Power Cost Adjustment Mechanism, Or.PUC Docket No. UE 392.</u>	Alliance of Western Energy Consumers	Power Cost Deferral
<u>In re the Application of Rocky Mountain Power for Authority to Decrease Current Rates by \$14.9 Million to Refund Deferred Net Power Costs Under Tariff Schedule 95 Energy Cost Adjustment Mechanism and to Decrease Current Rates by \$166 Thousand Under Tariff Schedule 93, REC and SO2 Revenue Adjustment Mechanism, Wy.PSC Docket No. 20000-599-EM-21.</u>	Wyoming Industrial Energy Consumers	Power Cost Deferral
<u>In re Portland General Electric 2021 Annual Update Tariff Schedule 125, Or. PUC Docket No. UE 391.</u>	Alliance of Western Energy Consumers	Power Cost Modeling
<u>In re Joint Application of Nevada Power Company d/b/a NV Energy and Sierra Pacific Power Company d/b/a NV Energy for approval of a regulatory asset account to recover costs relating to the development and implementation of their Joint Natural Disaster Protection Plan, PUC NV. Docket No. 21-03004.</u>	Wynn Las Vegas, LLC; Smart Energy Alliance	Single-Issue Rate Filing
<u>In re PacifiCorp d.b.a. Pacific Power, 2022 Transition Adjustment Mechanism, Or.PUC Docket No. UE 390.</u>	Alliance of Western Energy Consumers	Power Cost Modeling
<u>In re Avista 2020 General Rate Case, Wa.U.T.C. Docket No. UE-200900 (Cons.).</u>	Alliance of Western Energy Consumers	Revenue Requirement
<u>In re NV Energy's Fourth Amendment to Its 2018 Joint Integrated Resource Plan, PUC Nv. Docket No 20-07023.</u>	Wynn Las Vegas, LLC; Smart Energy Alliance	Transmission Planning
<u>In Re Cascade Natural Gas Corporation, 2020 General Rate Case, Wa.U.T.C. Docket No. UG-200568</u>	Alliance of Western Energy Consumers	Revenue Requirement
<u>In re Cascade Natural Gas Corporation, Petition to File Depreciation Study, Or.PUC Docket No. UM 2073</u>	Alliance of Western Energy Consumers	Depreciation Rates



Docket	Party	Topics
<u>In re the Application of Rocky Mountain Power for Authority to Increase Current Rates By \$7.4 Million to Recover Deferred Net Power Costs Under Tariff Schedule 95 Energy Cost Adjustment Mechanism and to Decrease Current Rates by \$604 Thousand Under Tariff Schedule 93, Rec and So2 Revenue Adjustment Mechanism.</u> Wy.PSC Docket No. 20000-582-EM-20	Wyoming Industrial Energy Consumers	Power Cost Deferral
<u>In re the Complaint of Willamette Falls Paper Company and West Linn Paper Company against Portland General Electric Company.</u> Or.PUC Docket No. UM 2107	Willamette Falls Paper Company	Consumer Direct Access, Tariff Dispute
<u>In re The Application of Rocky Mountain Power for Authority to Increase its Retail Electric Service Rates by Approximately \$7.1 Million Per Year or 1.1 Percent, to Revise the Energy Cost Adjustment Mechanism, and to Discontinue Operations at Cholla Unit 4.</u> Wy.PSC Docket No. 2000-578-ER-20	Wyoming Industrial Energy Consumers	Power Cost Modeling
<u>Avista Corporation 2021 General Rate Case.</u> Or.PUC Docket No. UG 389	Alliance of Western Energy Consumers	Revenue Requirement, Rate Design
<u>In re NW Natural Request for a General Rate Revision.</u> Or.PUC Docket No. UG 388.	Alliance of Western Energy Consumers	Revenue Requirement, Rate Design
<u>In re PacifiCorp, Request to Initiate an Investigation of Multi-Jurisdictional Issues and Approve an Inter-Jurisdictional Cost Allocation Protocol.</u> Or.PUC, UM 1050.	Alliance of Western Energy Consumers	Jurisdictional Allocation
<u>In re Puget Sound Energy 2019 General Rate Case.</u> Wa.UTC Docket No. UE 190529.	Alliance of Western Energy Consumers	Revenue Requirement, Coal Retirement Costs
<u>Avista Corporation 2020 General Rate Case.</u> Wa.UTC Docket No. UE-190334 (Cons.)	Alliance of Western Energy Consumers	Revenue Requirement, Rate Design
<u>In re Cascade Natural Gas Corporation Application for Approval of a Safety Cost Recovery Mechanism.</u> Or. PUC Docket No. UM 2026.	Alliance of Western Energy Consumers	Ratemaking Policy
<u>In re Avista Corporation, Request for a General Rate Revision.</u> Or.PUC Docket No. UG 366.	Alliance of Western Energy Consumers	Revenue Requirement, Rate Design
<u>In re Portland General Electric, 2020 Annual Update Tariff (Schedule 125).</u> Or.PUC Docket No UE 359.	Alliance of Western Energy Consumers	Power Cost Modeling
<u>In re PacifiCorp 2020 Transition Adjustment Mechanism.</u> Or.PUC Docket No. UE 356.	Alliance of Western Energy Consumers	Power Cost Modeling
<u>In re PacifiCorp 2020 Renewable Adjustment Clause.</u> Or.PUC Docket No. UE 352.	Alliance of Western Energy Consumers	Single-Issue Rate Filing
<u>2020 Joint Power and Transmission Rate Proceeding.</u> Bonneville Power Administration, Case No. BP-20.	Alliance of Western Energy Consumers	Revenue Requirement, Policy
<u>In the Matter of the Application of MSG Las Vegas, LLC for a Proposed Transaction with a Provider of New Electric Resources.</u> PUC Nv. Docket No. 18-10034	Madison Square Garden	Customer Direct Access
<u>Puget Sound Energy 2018 Expedited Rate Filing.</u> Wa.UTC Dockets UE-180899/UG-180900 (Cons.).	Alliance of Western Energy Consumers	Revenue Requirement, Settlement
<u>Georgia Pacific Gypsum LLC's Application to Purchase Energy, Capacity, and/or Ancillary Services from a Provider of New Electric Resources.</u> PUC Nv. Docket No. 18-09015.	Georgia Pacific	Customer Direct Access
<u>Joint Application of Nevada Power Company d/b/a NV Energy for approval of their 2018-2038 Triennial Integrated Resource Plan and 2019-2021 Energy Supply Plan.</u> PUCN Docket No. 18-06003.	Smart Energy Alliance	Resource Planning
<u>In re Cascade Natural Gas Corporation Request for a General Rate Revision.</u> Or.PUC, Docket No. UE 347.	Alliance of Western Energy Consumers	Revenue Requirement, Rate Design
<u>In re Portland General Electric Company Request for a General Rate Revision.</u> Or.PUC Docket No UE 335.	Alliance of Western Energy Consumers	Revenue Requirement, Rate Design

<b>Docket</b>	<b>Party</b>	<b>Topics</b>
<u>In re Northwest Natural Gas Company, dba NW Natural, Request for a General Rate Revision, Or.PUC Docket No. UG 344.</u>	Alliance of Western Energy Consumers	Revenue Requirement, Rate Design
<u>In re Cascade Natural Gas Corporation Request for a General Rate Revision, Wa.UTC, Docket No. UE-170929.</u>	Northwest Industrial Gas Users	Revenue Requirement, Rate Design
<u>In the Matter of Hydro One Limited, Application for Authorization to Exercise Substantial Influence over the Policies and Actions of Avista Corporation, Or.PUC, Docket No. UM 1897.</u>	Alliance of Western Energy Consumers	Merger
<u>Application of Rocky Mountain Power for Approval of a Significant Energy Resource Decision and Voluntary Request for Approval of Resource Decision, Ut.PSC Docket No. 17-035-40</u>	Utah Industrial Energy Consumers, & Utah Associated Energy Users	New Resource Addition
<u>In re PacifiCorp, dba Rocky Mountain Power, for a CPCN and Binding Ratemaking Treatment for New Wind and Transmission Facilities, Id.PUC Case No. PAC-E-17-07</u>	PacifiCorp Idaho Industrial Customers	New Resource Addition
<u>In re PacifiCorp, dba Pacific Power, 2016 Power Cost Adjustment Mechanism, Or.PUC, Docket No. UE 327.</u>	Alliance of Western Energy Consumers	Power Cost Deferral
<u>In re PacifiCorp 2016 Power Cost Adjustment Mechanism, Wa.UTC Docket No. UE-170717</u>	Boise Whitepaper, LLC	Power Cost Deferral
<u>In re Avista Corporation 2018 General Rate Case, Wa.UTC Dockets UE-170485 and UG-170486 (Consolidated).</u>	Industrial Customers of Northwest Utilities, & Northwest Industrial Gas Users	Revenue Requirement, Rate Design
<u>Application of Nevada Power Company d/b/a NV Energy for authority to adjust its annual revenue requirement for general rates charged to all classes of electric customers and for relief properly related thereto, PUCN. Docket No. 17-06003.</u>	Smart Energy Alliance	Revenue Requirement
<u>In re the Application of Rocky Mountain Power for Authority to Decrease Current Rates by \$15.7 Million to Refund Deferred Net Power Costs Under Tariff Schedule 95 Energy Cost Adjustment Mechanism and to Decrease Current Rates By \$528 Thousand Under Tariff Schedule 93, REC and SO2 Revenue Adjustment Mechanism, Wy. PSC, Docket No. 20000-514-EA-17 (Record No. 14696).</u>	Wyoming Industrial Energy Consumers	Power Cost Deferral
<u>In re the 2018 General Rate Case of Puget Sound Energy, Wa.UTC, Docket No. UE-170033 (Cons.).</u>	Industrial Customers of Northwest Utilities, & Northwest Industrial Gas Users	Revenue Requirement, Rate Design
<u>In re PacifiCorp, dba Pacific Power, 2018 Transition Adjustment Mechanism, Or.PUC, Docket No. UE 323.</u>	Industrial Customers of Northwest Utilities	Power Cost Modeling
<u>In re Portland General Electric Company, Request for a General Rate Revision, Or.PUC, Docket No. UE 319.</u>	Industrial Customers of Northwest Utilities	Revenue Requirement, Rate Design
<u>In re Portland General Electric Company, Application for Transportation Electrification Programs, Or.PUC, UM 1811.</u>	Industrial Customers of Northwest Utilities	Electric Vehicle Charging
<u>In re Pacific Power &amp; Light Company, Application for Transportation Electrification Programs, Or.PUC, Docket No. UM 1810.</u>	Industrial Customers of Northwest Utilities	Single-issue Ratemaking
<u>In re the Public Utility Commission of Oregon, Investigation to Examine PacifiCorp, dba Pacific Power's Non-Standard Avoided Cost Pricing, Or.PUC, Docket No. UM 1802.</u>	Industrial Customers of Northwest Utilities	Qualifying Facilities
<u>In re Pacific Power &amp; Light Co., Revisions to Tariff WN U-75, Advice No. 16-05, to modify the Company's existing tariffs governing permanent disconnection and removal procedures, Wa.UTC, Docket No. UE-161204.</u>	Boise Whitepaper, LLC	Customer Direct Access
<u>In re Puget Sound Energy's Revisions to Tariff WN U-60, Adding Schedule 451, Implementing a New Retail Wheeling Service, Wa.UTC, Docket No. UE-161123.</u>	Industrial Customers of Northwest Utilities	Customer Direct Access

<b>Docket</b>	<b>Party</b>	<b>Topics</b>
<u>2018 Joint Power and Transmission Rate Proceeding, Bonneville Power Administration, Case No. BP-18.</u>	Industrial Customers of Northwest Utilities	Revenue Requirement, Policy
<u>In re Portland General Electric Company Application for Approval of Sale of Harborton Restoration Project Property, Or.PUC, Docket No. UP 334 (Cons.).</u>	Industrial Customers of Northwest Utilities	Environmental Deferral
<u>In re An Investigation of Policies Related to Renewable Distributed Electric Generation, Ar.PSC, Matter No. 16-028-U.</u>	Arkansas Electric Energy Consumers	Net Metering
<u>In re Net Metering and the Implementation of Act 827 of 2015, Ar.PSC, Matter No. 16-027-R.</u>	Arkansas Electric Energy Consumers	Net Metering
<u>In re the Application of Rocky Mountain Power for Approval of the 2016 Energy Balancing Account, Ut.PSC, Docket No. 16-035-01</u>	Utah Associated Energy Users	Power Cost Deferral
<u>In re Avista Corporation Request for a General Rate Revision, Wa.UTC, Docket No. UE-160228 (Cons.).</u>	Industrial Customers of Northwest Utilities, & Northwest Industrial Gas Users	Revenue Requirement, Rate Design
<u>In re the Application of Rocky Mountain Power to Decrease Current Rates by \$2.7 Million to Recover Deferred Net Power Costs Pursuant to Tariff Schedule 95 and to Increase Rates by \$50 Thousand Pursuant to Tariff Schedule 93, Wy.PSC, Docket No. 20000-292-EA-16.</u>	Wyoming Industrial Energy Consumers	Power Cost Deferral
<u>In re PacifiCorp, dba Pacific Power, 2017 Transition Adjustment Mechanism, Or.PUC, Docket No. UE 307.</u>	Industrial Customers of Northwest Utilities	Power Cost Modeling
<u>In re Portland General Electric Company, 2017 Annual Power Cost Update Tariff (Schedule 125), Or.PUC, Docket No. UE 308.</u>	Industrial Customers of Northwest Utilities	Power Cost Modeling
<u>In re Pacific Power &amp; Light Company, General rate increase for electric services, Wa.UTC, Docket No. UE-152253.</u>	Boise Whitepaper, LLC	Revenue Requirement, Rate Design
<u>In The Matter of the Application of Rocky Mountain Power for Authority of a General Rate Increase in Its Retail Electric Utility Service Rates in Wyoming of \$32.4 Million Per Year or 4.5 Percent, Wy.PSC, Docket No. 20000-469-ER-15.</u>	Wyoming Industrial Energy Consumers	Power Cost Modeling
<u>In re Avista Corporation, General Rate Increase for Electric Services, Wa.UTC, Docket No. UE-150204.</u>	Industrial Customers of Northwest Utilities	Revenue Requirement, Rate Design
<u>In re the Application of Rocky Mountain Power to Decrease Rates by \$17.6 Million to Recover Deferred Net Power Costs Pursuant to Tariff Schedule 95 to Decrease Rates by \$4.7 Million Pursuant to Tariff Schedule 93, Wy.PSC, Docket No. 20000-472-EA-15.</u>	Wyoming Industrial Energy Consumers	Power Cost Deferral
<u>Formal complaint of The Walla Walla Country Club against Pacific Power &amp; Light Company for refusal to provide disconnection under Commission-approved terms and fees, as mandated under Company tariff rules, Wa.UTC, Docket No. UE-143932.</u>	Columbia Rural Electric Association	Customer Direct Access / Customer Choice
<u>In re PacifiCorp, dba Pacific Power, 2016 Transition Adjustment Mechanism, Or.PUC, Docket No. UE 296.</u>	Industrial Customers of Northwest Utilities	Power Cost Modeling
<u>In re Portland General Electric Company, Request for a General Rate Revision, Or.PUC, Docket No. UE 294.</u>	Industrial Customers of Northwest Utilities	Revenue Requirement, Rate Design
<u>In re Portland General Electric Company and PacifiCorp dba Pacific Power, Request for Generic Power Cost Adjustment Mechanism Investigation, Or.PUC, Docket No. UM 1662.</u>	Industrial Customers of Northwest Utilities	Power Cost Deferral
<u>In re PacifiCorp, dba Pacific Power, Application for Approval of Deer Creek Mine Transaction, Or.PUC, Docket No. UM 1712.</u>	Industrial Customers of Northwest Utilities	Single-issue Ratemaking
<u>In re Public Utility Commission of Oregon, Investigation to Explore Issues Related to a Renewable Generator's Contribution to Capacity, Or.PUC, Docket No. UM 1719.</u>	Industrial Customers of Northwest Utilities	Resource Planning

Docket	Party	Topics
<u>In re Portland General Electric Company, Application for Deferral Accounting of Excess Pension Costs and Carrying Costs on Cash Contributions, Or.PUC, Docket No. UM 1623.</u>	Industrial Customers of Northwest Utilities	Single-issue Ratemaking
<u>2016 Joint Power and Transmission Rate Proceeding, Bonneville Power Administration, Case No. BP-16.</u>	Industrial Customers of Northwest Utilities	Revenue Requirement, Policy
<u>In re Puget Sound Energy, Petition to Update Methodologies Used to Allocate Electric Cost of Service and for Electric Rate Design Purposes, Wa.UTC, Docket No. UE-141368.</u>	Industrial Customers of Northwest Utilities	Cost of Service
<u>In re Pacific Power &amp; Light Company, Request for a General Rate Revision Resulting in an Overall Price Change of 8.5 Percent, or \$27.2 Million, Wa.UTC, Docket No. UE-140762.</u>	Boise Whitepaper, LLC	Revenue Requirement, Rate Design
<u>In re Puget Sound Energy, Revises the Power Cost Rate in WN U-60, Tariff G, Schedule 95, to reflect a decrease of \$9,554,847 in the Company's overall normalized power supply costs, Wa.UTC, Docket No. UE-141141.</u>	Industrial Customers of Northwest Utilities	Power Cost Modeling
<u>In re the Application of Rocky Mountain Power for Authority to Increase Its Retail Electric Utility Service Rates in Wyoming Approximately \$36.1 Million Per Year or 5.3 Percent, Wy.PSC, Docket No. 20000-446-ER-14.</u>	Wyoming Industrial Energy Consumers	Power Cost Modeling
<u>In re Avista Corporation, General Rate Increase for Electric Services, RE, Tariff WN U-28, Which Proposes an Overall Net Electric Billed Increase of 5.5 Percent Effective January 1, 2015, Wa.UTC, Docket No. UE-140188.</u>	Industrial Customers of Northwest Utilities	Revenue Requirement, Rate Design, Power Costs
<u>In re PacifiCorp, dba Pacific Power, Application for Deferred Accounting and Prudence Determination Associated with the Energy Imbalance Market, Or.PUC, Docket No. UM 1689.</u>	Industrial Customers of Northwest Utilities	Single-issue Ratemaking
<u>In re PacifiCorp, dba Pacific Power, 2015 Transition Adjustment Mechanism, Or.PUC, Docket No. UE 287.</u>	Industrial Customers of Northwest Utilities	Power Cost Modeling
<u>In re Portland General Electric Company, Request for a General Rate Revision, Or.PUC, Docket No. UE 283.</u>	Industrial Customers of Northwest Utilities	Revenue Requirement, Rate Design
<u>In re Portland General Electric Company's Net Variable Power Costs (NVPC) and Annual Power Cost Update (APCU), Or.PUC, Docket No. UE 286.</u>	Industrial Customers of Northwest Utilities	Power Cost Modeling
<u>In re Portland General Electric Company 2014 Schedule 145 Boardman Power Plant Operating Adjustment, Or.PUC, Docket No. UE 281.</u>	Industrial Customers of Northwest Utilities	Coal Retirement
<u>In re PacifiCorp, dba Pacific Power, Transition Adjustment, Five-Year Cost of Service Opt-Out (adopting testimony of Donald W. Schoenbeck), Or.PUC, Docket No. UE 267.</u>	Industrial Customers of Northwest Utilities	Customer Direct Access