



Portland General Electric Company
121 SW Salmon Street • Portland, Oregon 97204
PortlandGeneral.com

July 14, 2017

Via Electronic Mail
puc.filingcenter@state.or.us

Filing Center
Public Utility Commission of Oregon
201 High St SE, Suite 100
P.O. Box 1088
Salem, Oregon 97301-1088

**Re: UM-1809 – Portland General Electric Company’s Detailed Depreciation
Study of Electric Utility Properties**

Attention Filing Center:

Enclosed for filing in the above-referenced docket are an original and five copies of the:

- **Stipulation; and**
- **Joint Testimony in Support of Stipulation (UM 1809 Peng – Mullins – Spanos / 100)**

These documents are being filed by electronic mail with the Filing Center.

Thank you in advance for your assistance.

A handwritten signature in black ink that reads "Stefan Brown" with the word "for" written below it.

Stefan Brown
Manager, Regulatory Affairs

Enclosures

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UM 1809

In the Matter of

PORTLAND GENERAL ELECTRIC
COMPANY

Detailed Depreciation Study of Electric
Utility Properties.

STIPULATION

This Stipulation (“Stipulation”) is between Portland General Electric Company (“PGE”), Staff of the Public Utility Commission of Oregon (“Staff”), and the Industrial Customers of Northwest Utilities (“ICNU”) (collectively, the “Stipulating Parties”).

On December 23, 2016, PGE filed with the Public Utility Commission of Oregon (“Commission”) the results of a detailed depreciation study of its utility properties as of December 31, 2015 (the “Study”), which included proposed depreciation lives, curves, and net salvage rates (collectively the “parameters”) and depreciation rates for PGE’s generation, transmission, distribution, and general plant. The depreciation rates initially proposed in UM 1809 would have resulted in an annual depreciation increase of approximately \$6.6 million. The increase is based upon a comparison of 2017 depreciation expense using filed depreciation study rates to 2017 depreciation expense using previously approved depreciation parameters. PGE also filed proposed depreciation rates to be used for the Carty generation facility (Carty).

The depreciation rates, if approved, will be used in the current pending general rate Docket No. UE 319.

The parties to this docket asked and responded to numerous data requests and a workshop was held on April 18, 2017. On June 1, 2017, PGE, Staff, and ICNU participated in a Settlement Conference. The discussions resulted in a compromise settlement by the Parties as set forth below. The Citizens’ Utility Board (CUB) of Oregon is a party to this docket, and has indicated

that it does not oppose this Stipulation.

PGE, Staff, and ICNU request that the Commission issue an order in this docket implementing the terms of this Stipulation. As a settlement of the issues in dispute, the Parties have agreed to depreciation parameters and rates that would result in a decrease of approximately \$8.8 million on an annual basis from that originally proposed in this docket based on plant data at December 31, 2015.

TERMS OF STIPULATION

1. This Stipulation resolves all issues in this docket.
2. The Parties agree that the changes shown in Exhibit “103, Table 2” to this Stipulation should be made for the identified lives, curves, net salvage value, and rates. With the exception of the parameters set forth in Exhibit “103, Table 2” to this Stipulation, the parameters should remain as filed in PGE’s Study.
3. Exhibit “102, Table 1” to the Stipulation is a complete list of all PGE depreciation parameters for all plant accounts by location, and depreciation parameters for PGE’s Carty Plant.
4. As part of the settlement, the Parties agree that for this depreciation study PGE should use the Average Service Life depreciation procedure for the FERC accounts of new generating facilities including Carty Plant placed in service after December 31, 2012. PGE will continue to use the straight-line, Equal Life Group method for all other assets and accounts.
5. The Parties agree that PGE includes Colstrip decommissioning costs of \$15.8 million in the Plant depreciation schedule and allocates these costs by FERC account.
6. The revised depreciation parameters described above and set forth in Exhibit “102, Table 1” are reasonable and should be adopted.
7. The revised depreciation rates shall be implemented on January 1, 2018, the effective date of PGE’s pending general rate request in Docket UE 319.
8. No later than the end of 2022, PGE shall file with the Commission another

detailed depreciation study of its utility property. The depreciation parameters detailed in Stipulation Exhibit “102, Table 1” will be utilized until the effective date of the next depreciation study.

9. The Stipulating Parties recommend and request that the Commission approve the adjustments described herein as appropriate and reasonable resolutions of all issues in this docket.

10. The Stipulating Parties agree that this Stipulation is in the public interest and will result in rates that are fair, just and reasonable and, if approved, will meet the standard in ORS 756.040.

11. The Stipulating Parties agree that this Stipulation represents a compromise in the positions of the parties. Without the written consent of all parties, evidence of conduct or statements, including but not limited to term sheets or other documents created solely for use in settlement conferences in this docket, are confidential and not admissible in the instant or any subsequent proceeding, unless independently discoverable or offered for other purposes allowed under ORS 40.190.

12. The Stipulating Parties have negotiated this Comprehensive Settlement as an integrated document. If the Commission rejects all or any material part of this Stipulation, or adds any material condition to any final order that is not consistent with this Stipulation, each Stipulating Party reserves its right to: (i) withdraw from the Stipulation, upon written notice to the Commission and other Parties within five (5) business days of service of the final order that rejects this Stipulation, in whole or material part, or adds such material condition; (ii) pursuant to OAR 860-001-0350(9), to present evidence and argument on the record in support of the Stipulation, including the right to cross-examine witnesses, introduce evidence as deemed appropriate to respond fully to issues presented, and raise issues that are incorporated in the settlement embodied in this Stipulation; and (iii) pursuant to ORS 756.561 and

OAR 860-001-0720, to seek rehearing or reconsideration or to appeal the Commission order under ORS 756.610. Nothing in this paragraph provides any Party the right to withdraw from this Stipulation as a result of the Commission's resolution of issues that this Stipulation does not resolve.

13. This Stipulation will be offered into the record in this proceeding as evidence pursuant to OAR 860-01-0350(7). The Stipulating Parties agree to support this Stipulation throughout this proceeding and in any appeal, provide witnesses to support this Stipulation (if specifically required by the Commission), and recommend that the Commission issue an order adopting the settlements contained herein. The Stipulating Parties also agree to cooperate in drafting and submitting an explanatory brief and written testimony per OAR 860-001-0350(7), unless such requirement is waived. By entering into this Stipulation, no Stipulating Party shall be deemed to have approved, admitted or consented to the facts, principles, methods or theories employed by any other Party in arriving at the terms of this Stipulation. Except as provided in this Stipulation, no Stipulating Party shall be deemed to have agreed that any provision of this Stipulation is appropriate for resolving issues in any other proceeding.

14. This Stipulation may be signed in any number of counterparts, each of which will be an original for all purposes, but all of which taken together will constitute one and the same agreement.

DATED this 14th day of July, 2017.



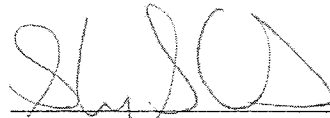
PORTLAND GENERAL ELECTRIC
COMPANY

STAFF OF THE PUBLIC UTILITY
COMMISSION OF OREGON

INDUSTRIAL CONSUMERS OF
NORTHWEST UTILITIES

DATED this 14th day of July, 2017.

PORTLAND GENERAL ELECTRIC
COMPANY

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STAFF OF THE PUBLIC UTILITY
COMMISSION OF OREGON

INDUSTRIAL CONSUMERS OF
NORTHWEST UTILITIES

DATED this 14th day of July, 2017.

PORTLAND GENERAL ELECTRIC
COMPANY

STAFF OF THE PUBLIC UTILITY
COMMISSION OF OREGON

A handwritten signature in black ink, appearing to be 'T. D.', written over a horizontal line.

INDUSTRIAL CONSUMERS OF
NORTHWEST UTILITIES

PORTLAND GENERAL ELECTRIC
TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVES, NET SALVAGE, ORIGINAL COST, BOOK RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AT DECEMBER 31, 2015

ACCOUNT (1)	SURVIVOR CURVE (2)	NET SALVAGE PERCENT (3)	ORIGINAL COST AS OF DECEMBER 31, 2015 (4)	BOOK RESERVE (5)	FUTURE ACCRUALS (6)	CALCULATED ANNUAL ACCRUAL		COMPOSITE REMAINING LIFE (9)=(6)/(7)	
						AMOUNT (7)	RATE (8)=(7)/(4)		
STEAM PRODUCTION PLANT									
	BOARDMAN								
311.00	STRUCTURES AND IMPROVEMENTS	90 - S1.5 *	(1)	107,051,192.27	87,611,884	20,509,820	3,887,862 **	3.63	5.0
312.00	BOILER PLANT EQUIPMENT	65 - R3 *	(1)	258,670,948.24	182,243,279	79,014,379	15,194,946 **	5.87	5.0
312.00	BOARDMAN DECOMMISSIONING ACCRUAL			0.00	38,794,038	29,384,465	5,876,893 ***	-	5.0
312.01	RAIL CARS	28 - S0 *	0	10,039,472.22	8,451,505	1,587,967	317,593 **	3.16	5.0
314.00	TURBOGENERATOR UNITS	55 - R2 *	(1)	87,020,784.20	68,284,747	19,606,245	3,747,237 **	4.31	5.0
315.00	ACCESSORY ELECTRIC EQUIPMENT	60 - R2.5 *	(1)	23,989,831.51	19,749,114	4,480,616	848,144 **	3.54	5.0
316.00	MISCELLANEOUS POWER PLANT EQUIPMENT	60 - R1 *	(1)	6,389,064.18	4,797,377	1,655,578	318,343 ***	4.98	5.0
	TOTAL BOARDMAN			493,161,292.62	409,931,944	156,239,070	30,191,017	6.12	5.0
	COLSTRIP								
311.00	STRUCTURES AND IMPROVEMENTS	90 - S1.5 *	(4)	114,980,317.08	97,349,652	22,229,878	1,537,718	1.34	14.5
312.00	BOILER PLANT EQUIPMENT	65 - R3 *	(4)	229,441,033.29	171,920,909	66,697,766	4,598,492	2.00	14.5
314.00	TURBOGENERATOR UNITS	55 - R2 *	(4)	73,163,039.84	42,236,284	33,853,277	2,460,818	3.36	13.8
315.00	ACCESSORY ELECTRIC EQUIPMENT	60 - R2.5 *	(4)	23,503,535.66	19,216,964	5,226,713	378,888	1.61	13.8
316.00	MISCELLANEOUS POWER PLANT EQUIPMENT	60 - R1 *	(4)	6,315,521.02	5,013,262	1,554,880	113,521	1.80	13.7
	TOTAL COLSTRIP			447,403,446.89	335,737,071	129,562,514	9,089,437	2.03	14.3
	TOTAL STEAM PRODUCTION PLANT			940,564,739.51	745,669,015	285,801,584	39,280,454	4.18	7.3
HYDRAULIC PRODUCTION PLANT									
331.00	STRUCTURES AND IMPROVEMENTS								
	FARADAY	110 - R2.5 *	(58)	6,507,398.73	1,761,056	8,520,634	231,946	3.56	36.7
	NORTH FORK	110 - R2.5 *	(78)	8,766,845.94	2,804,512	12,800,474	346,484	3.95	36.9
	OAK GROVE	110 - R2.5 *	(57)	7,808,607.05	2,731,475	9,528,038	262,667	3.36	36.3
	PELTON	110 - R2.5 *	(176)	6,081,024.87	2,466,632	14,316,997	393,296	6.47	36.4
	RIVER MILL	110 - R2.5 *	(101)	3,087,139.50	1,204,960	5,000,190	143,068	4.63	34.9
	ROUND BUTTE	110 - R2.5 *	(78)	11,632,778.01	3,211,779	17,494,566	477,852	4.11	36.6
	SULLIVAN	110 - R2.5 *	(31)	9,367,473.54	2,234,868	10,036,522	527,354	5.63	19.0
	TOTAL STRUCTURES AND IMPROVEMENTS			53,251,267.64	16,415,282	77,697,421	2,382,667	4.47	32.6
332.00	RESERVOIRS, DAMS AND WATERWAYS								
	FARADAY	105 - R3 *	(58)	25,710,245.82	13,348,998	27,273,190	740,910	2.88	36.8
	NORTH FORK	105 - R3 *	(78)	82,474,814.59	20,648,726	126,156,444	3,339,631	4.05	37.8
	OAK GROVE	105 - R3 *	(57)	24,250,758.39	20,507,796	17,565,895	476,477	1.96	36.9
	PELTON	105 - R3 *	(176)	10,573,893.13	9,334,743	19,849,202	570,012	5.39	34.8
	RIVER MILL	105 - R3 *	(101)	54,796,423.92	14,177,614	95,963,198	2,541,153	4.64	37.8
	ROUND BUTTE	105 - R3 *	(78)	111,749,067.52	33,150,025	165,763,315	4,393,932	3.93	37.7
	SULLIVAN	105 - R3 *	(31)	23,569,921.71	6,537,779	24,338,818	1,267,803	5.38	19.2
	TOTAL RESERVOIRS, DAMS AND WATERWAYS			333,125,125.08	117,705,681	476,910,062	13,329,918	4.00	35.8

PORTLAND GENERAL ELECTRIC
 TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVES, NET SALVAGE, ORIGINAL COST, BOOK RESERVE AND CALCULATED
 ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AT DECEMBER 31, 2015

ACCOUNT (1)	SURVIVOR CURVE (2)	NET SALVAGE PERCENT (3)	ORIGINAL COST AS OF DECEMBER 31, 2015 (4)	BOOK RESERVE (5)	FUTURE ACCRUALS (6)	CALCULATED ANNUAL ACCRUAL		COMPOSITE REMAINING LIFE (9)=(6)/(7)	
						AMOUNT (7)	RATE (8)=(7)/(4)		
333.00	WATER WHEELS, TURBINES AND GENERATORS								
	FARADAY	90 - S1 *	(58)	6,743,974.26	3,475,327	7,180,152	207,829	3.08	34.5
	NORTH FORK	90 - S1 *	(78)	6,899,509.02	6,282,294	5,998,832	181,063	2.62	33.1
	OAK GROVE	90 - S1 *	(57)	6,507,010.60	3,242,840	6,973,167	202,168	3.11	34.5
	PELTON	90 - S1 *	(176)	4,105,699.33	4,762,863	6,568,867	212,780	5.18	30.9
	RIVER MILL	90 - S1 *	(101)	5,925,913.48	2,853,284	9,057,802	260,583	4.40	34.8
	ROUND BUTTE	90 - S1 *	(78)	21,073,501.20	8,065,470	29,445,362	811,466	3.85	36.3
	SULLIVAN	90 - S1 *	(31)	9,416,266.85	3,831,447	8,503,863	452,491	4.81	18.8
	TOTAL WATER WHEELS, TURBINES AND GENERATORS			60,671,874.74	32,513,525	73,728,045	2,328,380	3.84	31.7
334.00	ACCESSORY ELECTRIC EQUIPMENT								
	FARADAY	60 - R2.5 *	(58)	2,581,008.84	1,266,781	2,811,213	93,695	3.63	30.0
	NORTH FORK	60 - R2.5 *	(78)	1,094,113.25	748,624	1,198,898	39,649	3.62	30.2
	OAK GROVE	60 - R2.5 *	(57)	3,252,567.74	959,520	4,147,011	144,195	4.43	28.8
	PELTON	60 - R2.5 *	(176)	2,526,584.92	1,078,094	5,895,280	191,498	7.58	30.8
	RIVER MILL	60 - R2.5 *	(101)	2,613,282.13	1,196,518	4,056,179	133,436	5.11	30.4
	ROUND BUTTE	60 - R2.5 *	(78)	2,312,032.27	920,949	3,194,468	102,040	4.41	31.3
	SULLIVAN	60 - R2.5 *	(31)	4,287,664.38	1,121,270	4,495,570	244,005	5.89	18.4
	TOTAL ACCESSORY ELECTRIC EQUIPMENT			18,667,253.53	7,291,756	25,798,619	948,518	5.08	27.2
335.00	MISCELLANEOUS PLANT EQUIPMENT								
	FARADAY	55 - R0.5 *	(58)	227,707.67	112,191	247,587	11,218	4.93	22.1
	NORTH FORK	55 - R0.5 *	(78)	490,238.58	345,014	527,611	21,414	4.37	24.6
	OAK GROVE	55 - R0.5 *	(57)	294,816.36	39,533	423,329	17,818	6.04	23.8
	PELTON	55 - R0.5 *	(176)	180,729.78	151,648	347,166	16,153	8.94	21.5
	RIVER MILL	55 - R0.5 *	(101)	20,116.12	7,019	33,414	1,240	6.16	26.9
	ROUND BUTTE	55 - R0.5 *	(78)	775,739.77	352,575	1,028,242	41,755	5.38	24.6
	SULLIVAN	55 - R0.5 *	(31)	109,225.68	30,729	112,357	6,743	6.17	16.7
	TOTAL MISCELLANEOUS PLANT EQUIPMENT			2,098,573.96	1,038,709	2,719,706	116,341	5.54	23.4
336.00	ROADS, RAILROADS, AND BRIDGES								
	FARADAY	75 - R1.5 *	(58)	1,976,298.06	720,109	2,402,442	76,894	3.89	31.2
	NORTH FORK	75 - R1.5 *	(78)	2,579,914.84	899,594	3,692,654	121,331	4.70	30.4
	OAK GROVE	75 - R1.5 *	(57)	2,322,129.51	2,348,085	1,297,658	54,378	2.34	23.9
	PELTON	75 - R1.5 *	(176)	2,148,378.02	918,543	5,010,980	160,335	7.46	31.3
	RIVER MILL	75 - R1.5 *	(101)	458,019.14	173,680	746,938	23,197	5.06	32.2
	ROUND BUTTE	75 - R1.5 *	(78)	1,575,722.57	520,847	2,283,939	76,767	4.87	29.8
	TOTAL ROADS, RAILROADS, AND BRIDGES			11,060,462.14	5,580,858	15,434,611	512,902	4.64	30.1
	TOTAL HYDRAULIC PRODUCTION PLANT			478,874,557.09	180,545,811	672,288,464	19,618,726	4.10	34.3
	OTHER PRODUCTION PLANT								
341.00	STRUCTURES AND IMPROVEMENTS								
	BEAVER - CT	70 - R3 *	(6)	35,405,156.97	28,773,362	8,756,104	617,260	1.74	14.2
	COYOTE SPRINGS - CT	70 - R3 *	(5)	11,227,916.75	7,079,845	4,709,468	202,241	1.80	23.3
	PORT WESTWARD - CT	70 - R3 *	(7)	41,367,466.65	7,883,237	36,379,952	1,119,714	2.71	32.5
	PORT WESTWARD II	70 - R3 *	(7)	28,892,514.71	719,655	30,195,336	702,054	2.43	43.0
	TOTAL STRUCTURES AND IMPROVEMENTS			116,893,055.08	44,456,099	80,040,860	2,641,269	2.26	30.3

PORTLAND GENERAL ELECTRIC
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 ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AT DECEMBER 31, 2015

	ACCOUNT (1)	SURVIVOR CURVE (2)	NET SALVAGE PERCENT (3)	ORIGINAL COST AS OF DECEMBER 31, 2015 (4)	BOOK RESERVE (5)	FUTURE ACCRUALS (6)	CALCULATED ANNUAL ACCRUAL		COMPOSITE REMAINING LIFE (9)=(6)/(7)
							AMOUNT (7)	RATE (8)=(7)/(4)	
341.01	STRUCTURES AND IMPROVEMENTS - WIND								
	BIGLOW CANYON WIND FARM	40 - R4 *	(8)	32,892,664.86	8,255,388	27,268,690	878,719	2.67	31.0
	TUCANNON RIVER WIND FARM	40 - R4 *	(7)	17,769,588.29	512,935	18,500,524	483,421	2.72	38.3
	TOTAL STRUCTURES AND IMPROVEMENTS - WIND			50,662,253.15	8,768,323	45,769,214	1,362,140	2.69	33.6
342.00	FUEL HOLDERS, PRODUCERS AND ACCESSORIES								
	BEAVER - CT	50 - R3 *	(6)	51,148,868.32	48,751,107	5,466,693	424,358	0.83	12.9
	COYOTE SPRINGS - CT	50 - R3 *	(5)	36,852,435.94	22,574,432	16,120,626	756,172	2.05	21.3
	PORT WESTWARD - CT	50 - R3 *	(7)	9,474,576.21	4,928,251	5,209,546	174,292	1.84	29.9
	PORT WESTWARD II	50 - R3 *	(7)	6,600,696.56	167,166	6,895,579	169,884	2.57	40.6
	KB PIPELINE	50 - R3 *	(10)	20,488,296.46	16,025,680	6,511,446	474,694	2.32	13.7
	TOTAL FUEL HOLDERS, PRODUCERS AND ACCESSORIES			124,564,873.49	92,446,636	40,203,890	1,999,400	1.61	20.1
344.00	GENERATORS								
	BEAVER - CT	42 - R1.5 *	(6)	105,251,250.10	65,406,021	46,160,304	3,614,287	3.43	12.8
	COYOTE SPRINGS - CT	42 - R1.5 *	(5)	124,431,320.70	59,928,915	70,723,972	3,753,327	3.02	18.8
	PORT WESTWARD - CT	42 - R1.5 *	(7)	193,348,812.60	43,720,635	163,162,594	6,873,526	3.55	23.7
	PORT WESTWARD II	42 - R1.5 *	(7)	241,967,755.26	6,952,288	251,953,210	7,096,623	2.93	35.5
	TOTAL GENERATORS			664,999,138.66	176,007,859	532,000,080	21,337,763	3.21	24.9
344.01	GENERATORS - WIND								
	BIGLOW CANYON WIND FARM	30 - R3 *	(8)	860,739,964.29	225,895,265	703,703,896	34,024,847	3.95	20.7
	TUCANNON RIVER WIND FARM	30 - R3 *	(7)	446,378,931.92	16,920,717	460,704,740	16,148,081	3.62	28.5
	TOTAL GENERATORS - WIND			1,307,118,896.21	242,815,982	1,164,408,636	50,172,928	3.84	23.2
344.02	GENERATORS - SOLAR	20 - L2.5	(2)	1,467,561.85	41,740	1,455,173	74,624	5.08	19.5
345.00	ACCESSORY ELECTRIC EQUIPMENT								
	DISPATCH GENERATION	45 - R2.5	(5)	11,478,510.39	2,344,228	9,708,208	297,666	2.59	32.6
	BEAVER - CT	45 - R2.5 *	(6)	24,145,243.83	11,722,095	13,871,863	1,045,319	4.33	13.3
	COYOTE SPRINGS - CT	45 - R2.5 *	(5)	12,132,732.79	7,630,592	5,108,777	259,310	2.14	19.7
	PORT WESTWARD - CT	45 - R2.5 *	(7)	8,949,403.88	2,625,054	6,950,808	255,940	2.86	27.2
	PORT WESTWARD II	45 - R2.5 *	(7)	9,473,952.07	265,080	9,872,049	258,025	2.72	38.3
	TOTAL ACCESSORY ELECTRIC EQUIPMENT			66,179,842.96	24,587,049	45,511,705	2,116,260	3.20	21.5
345.01	ACCESSORY ELECTRIC EQUIPMENT - WIND								
	BIGLOW CANYON WIND FARM	30 - R2.5 *	(8)	25,496,497.01	5,893,029	21,643,188	1,050,678	4.12	20.6
	TUCANNON RIVER WIND FARM	30 - R2.5 *	(7)	15,801,270.29	585,197	16,322,162	571,104	3.61	28.6
	TOTAL ACCESSORY ELECTRIC EQUIPMENT - WIND			41,297,767.30	6,478,226	37,965,350	1,621,782	3.93	23.4
346.00	MISCELLANEOUS PLANT EQUIPMENT								
	BEAVER - CT	55 - R2.5 *	(6)	4,351,056.14	3,549,989	1,062,131	77,741	1.79	13.7
	COYOTE SPRINGS - CT	55 - R2.5 *	(5)	2,625,081.78	1,288,897	1,467,439	66,534	2.53	22.1
	PORT WESTWARD - CT	55 - R2.5 *	(7)	3,176,638.78	646,833	2,752,170	93,036	2.93	29.6
	PORT WESTWARD II	55 - R2.5 *	(7)	3,137,236.36	77,299	3,279,544	80,598	2.57	40.7
	KB PIPELINE	55 - R2.5 *	(5)	81,794.37	67,349	18,535	1,351	1.65	13.7
	TOTAL MISCELLANEOUS PLANT EQUIPMENT			13,371,807.43	5,630,367	8,579,819	319,260	2.39	26.9

PORTLAND GENERAL ELECTRIC
TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVES, NET SALVAGE, ORIGINAL COST, BOOK RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AT DECEMBER 31, 2015

ACCOUNT (1)	SURVIVOR CURVE (2)	NET SALVAGE PERCENT (3)	ORIGINAL COST AS OF DECEMBER 31, 2015 (4)	BOOK RESERVE (5)	FUTURE ACCRUALS (6)	CALCULATED ANNUAL ACCRUAL		COMPOSITE REMAINING LIFE (9)=(6)/(7)
						AMOUNT (7)	RATE (8)=(7)/(4)	
346.01 MISCELLANEOUS PLANT EQUIPMENT - WIND								
BIGLOW CANYON WIND FARM	40 - R2.5 *	(8)	1,323,570.90	267,760	1,161,697	41,642	3.15	27.9
TUCANNON RIVER WIND FARM	40 - R2.5 *	(7)	486,495.43	15,218	505,332	13,577	2.79	37.2
TOTAL ACCESSORY ELECTRIC EQUIPMENT - WIND			1,810,066.33	282,978	1,667,029	55,219	3.05	30.2
TOTAL OTHER PRODUCTION PLANT			2,388,365,262.46	601,515,259	1,957,601,756	81,700,645	3.42	24.0
TOTAL PRODUCTION			3,807,804,559.06	1,527,730,085	2,915,691,804	140,599,825	3.69	
TRANSMISSION PLANT								
352.00 STRUCTURES AND IMPROVEMENTS	65 - R2.5	(15)	19,312,917.31	7,936,981	14,272,674	344,467	1.78	41.4
353.00 STATION EQUIPMENT	57 - R2	(15)	267,904,091.69	94,367,051	213,722,654	5,918,535	2.21	36.1
354.00 STATION EQUIPMENT - BOARDMAN	57 - R2 *	(15)	5,908,401.82	4,777,880	2,016,782	415,797	7.04	4.9
354.00 TOWERS AND FIXTURES	70 - S3	(10)	46,819,259.47	24,217,309	27,283,876	881,028	1.88	31.0
355.00 POLES AND FIXTURES	50 - R1	(45)	25,714,209.81	11,988,605	25,296,999	844,683	3.28	29.9
356.00 OVERHEAD CONDUCTORS AND DEVICES	65 - R2.5	(15)	73,514,806.59	60,343,434	24,198,594	515,611	0.70	46.9
359.00 ROADS AND TRAILS	65 - R3	0	286,332.32	159,587	126,745	3,957	1.38	32.0
TOTAL TRANSMISSION PLANT			439,460,019.01	203,790,847	306,918,524	8,924,078	2.03	34.4
DISTRIBUTION PLANT								
361.00 STRUCTURES AND IMPROVEMENTS	65 - R2	(25)	39,801,374.33	14,627,097	35,124,621	884,126	2.22	39.7
362.00 STATION EQUIPMENT	55 - S0	(20)	472,305,679.82	145,636,170	421,130,646	13,465,426	2.85	31.3
363.00 STORAGE BATTERY	15 - L3	(5)	387,215.83	51,298	355,279	32,923	8.50	10.8
364.00 POLES, TOWERS AND FIXTURES	48 - R0.5	(45)	349,610,655.27	253,174,817	253,760,633	9,577,378	2.74	26.5
365.00 OVERHEAD CONDUCTORS AND DEVICES	50 - S0.5	(70)	587,352,192.37	401,592,869	596,905,858	19,871,601	3.38	30.0
366.00 UNDERGROUND CONDUIT	80 - R4	(10)	15,385,200.81	9,995,741	6,927,980	144,328	0.94	48.0
367.00 UNDERGROUND CONDUCTORS AND DEVICES	55 - S1.5	(70)	690,312,080.69	428,571,957	744,958,580	20,951,550	3.04	35.6
368.00 LINE TRANSFORMERS	50 - R2.5	(10)	357,878,099.44	182,350,295	211,315,614	6,407,644	1.79	33.0
369.01 SERVICES - OVERHEAD	48 - R2	(30)	61,300,422.74	40,906,305	38,784,245	1,175,241	1.92	33.0
369.03 SERVICES - UNDERGROUND	50 - R4	(30)	354,770,903.06	274,949,537	186,252,637	5,106,647	1.44	36.5
370.00 METERS	29 - R2	(10)	5,909,028.71	779,879	5,720,053	353,212	5.98	16.2
370.01 METERS - AMI	16 - S2.5	(10)	136,195,804.78	41,386,300	108,429,085	10,794,809	7.93	10.0
370.02 METERS - RETAINED	16 - L0.5	(10)	7,301,494.19	3,414,262	4,617,382	655,312	8.98	7.0
371.00 INSTALLATIONS ON CUSTOMERS' PREMISES	30 - R4	0	376,133.46	282,975	93,158	6,448	1.71	14.4
373.01 CIRCUITS - OTHER	40 - L2.5	(27)	21,950,396.75	17,460,094	10,416,910	449,834	2.05	23.2
373.02 FIXTURES, ORNAMENTAL POSTS AND DEVICES	25 - L1	(27)	52,526,976.74	28,258,893	38,450,367	2,526,872	4.81	15.2
373.07 SENTINEL LIGHTING EQUIPMENT	29 - L0.5	(27)	8,491,020.98	10,386,209	397,388	25,010	0.29	15.9
TOTAL DISTRIBUTION PLANT			3,161,854,679.97	1,853,824,698	2,663,640,436	92,428,361	2.92	28.8

PORTLAND GENERAL ELECTRIC
TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVES, NET SALVAGE, ORIGINAL COST, BOOK RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AT DECEMBER 31, 2015

ACCOUNT (1)	SURVIVOR CURVE (2)	NET SALVAGE PERCENT (3)	ORIGINAL COST AS OF DECEMBER 31, 2015 (4)	BOOK RESERVE (5)	FUTURE ACCRUALS (6)	CALCULATED ANNUAL ACCRUAL		COMPOSITE REMAINING LIFE (9)=(6)/(7)	
						AMOUNT (7)	RATE (8)=(7)/(4)		
GENERAL PLANT									
390.00	STRUCTURES AND IMPROVEMENTS	40 - R0.5	(5)	94,090,979.72	25,831,389	72,964,140	3,598,550	3.82	20.3
390.10	STRUCTURES AND IMPROVEMENTS - LEASE								
	CSS	SQUARE	0	16,087.41	8,357	7,730	2,577	16.02	3.0
	EASTPORT	SQUARE	0	58,754.96	57,647	1,108	1,108	1.89	1.0
	ERC TUALATIN	SQUARE	0	414,255.32	297,945	116,310	48,061	11.60	2.4
	HILLSBORO	SQUARE	0	93,336.06	44,743	48,593	0	0.00	0.0
	SALEM	SQUARE	0	13,580.71	702	12,879	0	0.00	0.0
	WILSONVILLE	SQUARE	0	272,342.13	149,291	123,051	0	0.00	0.0
	WTC	SQUARE	0	24,503,645.04	6,538,850	17,964,795	647,382	2.64	27.7
	TOTAL STRUCTURES AND IMPROVEMENTS			25,372,001.63	7,097,535	18,274,466	699,128	2.76	26.1
	OFFICE FURNITURE AND EQUIPMENT								
391.10	FURNITURE AND EQUIPMENT	15 - SQ	0	22,059,425.35	7,299,101	14,760,324	1,505,944	6.83	9.8
391.20	COMPUTERS AND EQUIPMENT	5 - SQ	0	88,303,504.10	36,391,147	51,912,357	17,115,351	19.38	3.0
	TOTAL OFFICE FURNITURE AND EQUIPMENT			110,362,929.45	43,690,248	66,672,681	18,621,295	16.87	3.6
	TRANSPORTATION EQUIPMENT								
392.04	HEAVY DUTY TRUCKS	20 - S2	8	16,137,568.72	7,079,625	7,766,938	489,457	3.03	15.9
392.05	MEDIUM DUTY TRUCKS	16 - S1.5	8	14,767,748.37	8,146,081	5,440,248	550,523	3.73	9.9
392.06	LIGHT DUTY TRUCKS	13 - L2.5	8	10,963,150.43	5,118,816	4,967,282	571,196	5.21	8.7
392.08	TRAILERS	30 - S0	8	6,382,394.69	3,024,836	2,846,967	162,116	2.54	17.6
392.09	AUTOS	11 - S1.5	8	1,234,095.27	514,421	620,947	115,573	9.36	5.4
392.10	HELICOPTER	20 - S4	8	2,703,076.25	856,756	1,630,074	134,323	4.97	12.1
	TOTAL TRANSPORTATION EQUIPMENT			52,188,033.73	24,740,535	23,272,456	2,023,188	3.88	11.5
393.00	STORES EQUIPMENT	20 - SQ	0	2,830,641.95	1,410,975	1,419,667	134,666	4.76	10.5
394.00	TOOLS, SHOP AND GARAGE EQUIPMENT	20 - SQ	0	15,411,225.59	5,412,448	9,998,778	814,541	5.29	12.3
395.00	LABORATORY EQUIPMENT	15 - SQ	0	9,245,946.80	4,126,837	5,119,110	1,037,204	11.22	4.9
	POWER OPERATED EQUIPMENT								
396.01	MAN LIFT	14 - S1.5	10	25,700,584.24	13,451,565	9,678,961	1,210,977	4.71	8.0
396.02	DIGGER	16 - R2.5	10	7,108,488.69	4,083,549	2,314,091	250,187	3.52	9.2
396.03	CRANE	22 - S2.5	10	4,701,378.01	3,405,477	825,763	62,930	1.34	13.1
396.07	CONSTRUCTION EQUIPMENT	19 - L1.5	10	7,386,692.68	3,708,898	2,939,125	249,934	3.38	11.8
	TOTAL POWER OPERATED EQUIPMENT			44,897,143.62	24,649,489	15,757,940	1,774,028	3.95	8.9
	COMMUNICATION EQUIPMENT								
397.01	LINE EQUIPMENT	15 - SQ	0	6,771,132.76	1,014,926	5,756,207	469,727	6.94	12.3
397.03	RADIO, MICROWAVE AND TERMINAL EQUIPMENT	15 - SQ	0	90,674,615.01	45,187,175	45,487,440	6,141,122	6.77	7.4
397.06	MOBILE RADIO EQUIPMENT	15 - SQ	0	354,605.46	56,797	297,808	24,804	6.99	12.0
397.07	TELEPHONE EQUIPMENT	15 - SQ	0	848,493.02	661,698	186,795	17,716	2.09	10.5
	TOTAL COMMUNICATION EQUIPMENT			98,648,846.25	46,920,596	51,728,250	6,653,369	6.74	7.8
398.00	MISCELLANEOUS EQUIPMENT	20 - SQ	0	308,112.03	27,915	280,197	15,770	5.12	17.8
	TOTAL GENERAL PLANT			453,355,860.77	183,907,967	265,487,685	35,371,739	7.80	7.5
	TOTAL DEPRECIABLE PLANT			7,862,475,118.81	3,769,253,597	6,151,738,449	277,324,003	3.53	22.2

PORTLAND GENERAL ELECTRIC
TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVES, NET SALVAGE, ORIGINAL COST, BOOK RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AT DECEMBER 31, 2015

ACCOUNT (1)	SURVIVOR CURVE (2)	NET SALVAGE PERCENT (3)	ORIGINAL COST AS OF DECEMBER 31, 2015 (4)	BOOK RESERVE (5)	FUTURE ACCRUALS (6)	CALCULATED ANNUAL ACCRUAL		COMPOSITE REMAINING LIFE (9)=(6)/(7)
						AMOUNT (7)	RATE (8)=(7)/(4)	
NONDEPRECIABLE / ACCOUNTS NOT STUDIED								
302.00	FRANCHISES AND CONSENTS		182,591,124.04	43,095,243				
303.00	MISCELLANEOUS INTANGIBLE PLANT		373,677,186.19	183,671,147				
310.00	LAND AND LAND RIGHTS		4,161,715.00					
317.00	STEAM PRODUCTION PLANT - ARO		64,270,343.08	17,249,036				
330.00	LAND AND LAND RIGHTS		6,047,627.00	1,419,090				
332.00	RESERVOIRS, DAMS AND WATERWAYS (BULL RUN)			683,971				
337.00	HYDRAULIC PRODUCTION PLANT - ARO		5,128.00	3,822				
340.00	LAND AND LAND RIGHTS		48,946.00					
347.00	OTHER PRODUCTION PLANT - ARO		13,851,275.55	375,367				
350.00	LAND AND LAND RIGHTS		11,508,608.06	(6,755)				
359.10	TRANSMISSION PLANT - ARO		34,109.00	68,148				
360.00	LAND AND LAND RIGHTS		23,952,229.58	(1,788,512)				
370.03	METERS - ACCELERATED			(8,218)				
374.00	DISTRIBUTION PLANT - ARO		476,732.00	580,400				
389.00	LAND AND LAND RIGHTS		9,654,596.49	(458,153)				
392.01	TRANSPORTATION EQUIPMENT - UNKNOWN			241,194				
399.00	GENERAL PLANT - ARO		65,289.00	109,957				
TOTAL NONDEPRECIABLE / NOT STUDIED			690,344,908.99	245,235,737				
TOTAL ELECTRIC PLANT			8,552,820,027.80	4,014,489,334	6,151,738,449	277,324,003		

* CURVE SHOWN IS INTERIM SURVIVOR CURVE. EACH FACILITY IN THE ACCOUNT IS ASSIGNED AN INDIVIDUAL PROBABLE RETIREMENT YEAR.

** ANNUAL DEPRECIATION EXPENSE BASED ON METHOD PREVIOUSLY APPROVED BY THE OPUC IN ORDER NO. 10-478.

*** UPDATED PER CURRENTLY-APPROVED SCHEDULE 145.

NOTES:

ACCRUAL RATES FOR FACILITIES TO BE PLACED IN SERVICE AFTER DECEMBER 31, 2015 ARE AS FOLLOWS.

CARTY	RATE	SURVIVOR CURVE	NET SALVAGE PERCENT
341.00	2.45	70 - R3 *	(7)
342.00	2.61	48 - R3 *	(7)
344.00	3.02	38 - R2 *	(7)
346.00	2.58	55 - R2.5 *	(7)

Portland General Electric

Table 2. Comparison of Estimated Survivor Curves, Net Salvage, and Calculated Annual Depreciation Rates

ACCOUNT DESCRIPTION	ACCOUNT	2015 DEPRECIATION			SETTLEMENT		
		STUDY AS FILED			AGREEMENT		
		Survivor Curve	Net Salvage Percent	ELG Rate	Survivor Curve	Net Salvage Percent	ASL Rate
Other Production Plant							
Structures and Improvements	341						
	<i>Port Westward II</i>			2.56			2.43
Structures and Improvements - Wind	341.01						
	<i>Tucannon</i>			2.9			2.72
Fuel Holders, Producers & Accessories	342						
	<i>Beaver – CT</i>	48-R3	-6		50-R3	-6	
	<i>Coyote Springs - CT</i>	48-R3	-5		50-R3	-5	
	<i>Port Westward - CT</i>	48-R3	-7		50-R3	-7	
	<i>Port Westward II</i>	48-R3	-7	2.88	50-R3	-7	2.57
	<i>KB Pipeline</i>	48-R3	-10		50-R3	-10	
Generators	344						
	<i>Beaver – CT</i>	38-R2	-6		42-R1.5	-6	
	<i>Coyote Springs - CT</i>	38-R2	-5		42-R1.5	-5	
	<i>Port Westward - CT</i>	38-R2	-7		42-R1.5	-7	
	<i>Port Westward II</i>	38-R2	-7	4.02	42-R1.5	-7	2.93
Generators - Wind	344.01						
	<i>Tucannon</i>			4.19			3.62
Generators - Solar	344.02						
	<i>Solar</i>			6.12			5.08
Accessory Electric Equipment	345						
	<i>Port Westward II</i>			3.27			2.72
Accessory Electric Equipment - Wind	345.01						

	<i>Tucannon</i>			4.54			3.61
Miscellaneous Plant Equipment	346						
	<i>Port Westward II</i>			2.96			2.57
Miscellaneous Plant Equipment - Wind	346.01						
	<i>Tucannon</i>			3.47			2.79
Transmission Plant							
Poles & Fixtures	355	50-R1	-50		50-R1	-45	
Overhead Conductors & Devices	356	65-R2.5	-20		65-R2.5	-15	
Distribution Plant							
Poles, Towers & Fixtures	364	45-R1	-50		48-R0.5	-45	
Line Transformers	368	50-R2.5	-15		50-R2.5	-10	
Meters - AMI	370.01	15-S2.5	-10		16-S2.5	-10	
Circuits - Other	373.01	40-L2.5	-30		40-L2.5	-27	
Fixtures, Ornamental Posts & Devices	373.02	25-L1	-30		25-L1	-27	
Sentinel Lighting Equipment	373.07	29-L0.5	-30		29-L0.5	-27	
General Plant							
Heavy Duty Trucks	392.04	20-S2	5		20-S2	8	
Medium Duty Trucks	392.05	16-S1.5	5		16-S1.5	8	
Light Duty Trucks	392.06	13-L2.5	5		13-L2.5	8	
Trailers	392.08	30-S0	5		30-S0	8	
Autos	392.09	11-S1.5	5		11-S1.5	8	
Helicopter	392.1	20-S4	5		20-S4	8	
Total Depreciation Change							

Annual Change in Depreciation
(\$36,760)
(\$31,054)
(\$8,665)
(\$15,454)
(\$3,375)
(\$20,444)
(\$3,395)
(\$7,373)
(\$125,934)
(\$167,658)
(\$2,640,113)
(\$2,572,144)
(\$15,257)
(\$52,124)