STATE OF NORTH DAKOTA

BEFORE THE NORTH DAKOTA PUBLIC SERVICE COMMISSION

IN THE MATTER OF THE APPLICATION OF OTTER TAIL POWER COMPANY FOR AUTHORITY TO INCREASE RATES FOR ELECTRIC UTILITY SERVICE IN NORTH DAKOTA /	Case No. PU-23-342

FINAL DIRECT TESTIMONY OF KARL R. PAVLOVIC

Submitted on Behalf of the Advocacy Staff of the North Dakota Public Service Commission

October 4, 2024

92 PU-23-342 Filed 10/04/2024 Pages: 71
Prefiled Final Direct Testimony of Karl R. Pavlovic and Exhibits - Redacted
Public Service Commission Advocacy Staff
Mitch Armstrong, SAAG, Advocacy Counsel

Q. PLEASE STATE YOUR NAME, POSITION AND BUSINESS ADDRESS.

A. My name is Karl Richard Pavlovic. My business address is 22 Brookes Avenue, Gaithersburg, MD 20877. I am a Senior Consultant with and the Managing Director of PCMG and Associates LLC.

Q. PLEASE DESCRIBE PCMG.

A. PCMG and Associates LLC (PCMG) is an association of experts in economics, accounting, finance, and utility regulation and policy, with over 75 years collective experience providing assistance to counsel and expert testimony regarding the regulation of electric, gas, water, and wastewater utilities. PCMG began operation on January 1, 2015. Most recently PCMG has provided assistance to counsel and/or testimony in regulatory proceedings before Federal Energy Regulatory Commission, the Pennsylvania Public Service Commission, the Arkansas Public service Commission, California Public Utilities Commission, the Massachusetts Department of Public Utilities, the New Jersey Board of Public Utilities, and the Hawaii Public Utilities Commission.

Q. HAVE YOU PREPARED A SUMMARY OF YOUR QUALIFICATIONS AND EXPERIENCE?

A. Yes. Attachment A to my testimony summarizes my qualifications and experience.

Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY IN REGULATORY PROCEEDINGS?

A. Yes. Attachment A contains a complete list of my engagements as an expert in matters before state and federal regulatory agencies. I have submitted testimony to the Federal

Communications Commission, the Federal Energy Regulatory Commission, the Alaska Public Utilities Commission, the Alberta Utilities Commission, the Corporation Commission of the State of Kansas, the Delaware Public Service Commission, the Hawaii Public Utilities Commission, the Pennsylvania Public Service Commission, the Illinois Commerce Commission, the Maryland Public Service Commission, the Massachusetts Department of Public Utilities, the North Dakota Public Service Commission, the Maine Public Utilities Commission, the California Public Utilities Commission, and the Public Service Commission of the District of Columbia.

Q. IN WHICH PROCEEDINGS HAVE YOU PREVIOUSLY APPEARED BEFORE THIS COMMISSION?

A. I appeared on behalf of the North Dakota Public Service Commission Advocacy Staff in Case No. PU-12-813 Application of Northern States Power Company for Authority to Increase Rates for Electric Service in North Dakota, in Case No. PU-17-295 Montana-Dakota Utilities Co. for Authority to Establish Increased Rates for Natural Gas Service, in Case PU-20-441 Application of Northern States Power Company for Authority to Increase Rates for Electric Service in North Dakota, and in Case No. PU-21-381 Application of Northern States Power Company for Authority to Increase Rates for Natural Gas Service in North Dakota.

Q. PLEASE SUMMARIZE YOUR QUALIFICATIONS.

A. I received undergraduate and graduate degrees in Philosophy from Yale College and Purdue University. By education and professional experience I have expertise in formal and mathematical logic, statistics, economics, financial analysis, econometrics, and computer modeling. I have knowledge and experience in the areas of commercial and industrial operations in the energy, transportation, and telecommunications industries and am familiar with a wide range of experimental and investigative methods in science and engineering.

Q. PLEASE SUMMARIZE YOUR ELECTRIC AND GAS REGULATORY EXPERIENCE.

For most of my career I have performed analyses and submitted testimony regarding electric and gas utility least-cost planning, reliability, cost of service, rate design, and weather-emergency response. Specifically regarding electric utilities, I have testified on: (a) integrated resource planning, (b) class cost of service and rate design, and (c) various infrastructure operating expense and investment recovery mechanisms.

I. PURPOSE AND ORGANIZATION

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. I have been asked by the Commission's Advocacy Staff to address Otter Tail Power's (OTP) assertions and proposals in this proceeding regarding its (1) North Dakota jurisdictional cost of service study, (2) North Dakota class cost of service study, (3) North Dakota class revenue responsibility distribution, and (4) North Dakota rate design.

Q. HAVE YOU PREPARED ANY EXHIBITS IN SUPPORT OF YOUR RECOMMENDATIONS?

A. Yes. I have included the following three exhibits:

Exhibit KRP-1: Responses to ND-PSC-1101 and ND-PSC-1102

Exhibit KRP-2: Response to ND-PSC-1103

Exhibit KRP-3:	Response to Data Request ND-PSC-1104
Exhibit KRP-4:	DR ND-PSC-701_PUBLIC
Exhibit KRP-5:	DR ND-PSC-701_NOT PUBLIC Attachment 1, pages 1 and 2
Exhibit KRP-6:	DR ND-PSC-701_NOT PUBLIC Attachment 2
Exhibit KRP-7:	OTP Rates of Return
Exhibit KRP-8:	PSC Rates of Return

II. SUMMARY OF TESTIMONY AND CONCLUSIONS

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. OTP's supplemental jurisdictional cost study (JCOSS) errs in using the D2 allocator to allocate MISO revenues. I recommend that the NEPIS allocator be used to allocate MISO revenues to the North Dakota jurisdiction.

OTP's North Dakota minimum size system JCOSS and class cost of services study (CCOSS), proposed class revenue allocations and proposed tariff rates are inconsistent with the principal of cost causation. Therefore, I recommend that OTP's JCOSS and CCOSS without minimum size system be used as the basis for both class revenue allocation and tariff rate design.

OTP's proposed Section 5.02 formula rate and Sales Adjustment Rider lack supporting evidence and analysis and would reduce regulatory efficiency. I recommend the Commission reject both the Section 5.02 formula rate and the Sales Adjustment Rider.

III. DISCUSSION

Q. WHAT IS THE RELATIONSHIP BETWEEN COST ALLOCATION AND RATE DESIGN?

A. In regulatory theory and practice the relationship between cost allocation and rate design and the utility's recovery of its approved revenue requirement is conceptually simple. If a utility's costs of providing service are not accurately allocated to its rate classes and rate class costs are not accurately reflected in the rate classes' tariff billing charges, then the utility will either over or under recover its costs of service or revenue requirement. The less accurately the costs are reflected in the rate classes' tariff billing charges, the greater the utility's under or over recovery of its costs will be. Regarding electric utilities, the primary drivers of costs are (1) the number of customers served by the utility's production and delivery system, (2) customer demand on the system, and (3) the volume of electric energy delivered to customers.

In this proceeding the revenue requirement, class costs and tariff rates at issue concern Otter Tail's electric production, transmission and delivery systems serving North Dakota customers. Consequently, the fundamental issue is whether Otter Tail's proposed customer class cost allocations and tariff rates (1) accurately reflect the customer costs, demand costs, and commodity costs of its customers and (2) thus minimize the likelihood of either under or over recovery of Otter Tail's North Dakota electric revenue requirement.

A. OTP'S NORTH DAKOTA JURISDICTIONAL COST OF SERVICE STUDY

Q. HAVE YOU EXAMINED OTP'S NORTH DAKOTA JURISDICTIONAL COST OF SERVICE STUDY?

A. Yes. The testimony[1] and exhibits of Christy L. Petersen present (1) the process[2] and (2) the top line results[3] of the embedded jurisdictional cost of service study (JCOSS) for the forecast year 2024. The JCOSS follows the standard approach of functionalizing, classifying, and then, as appropriate, directly assigning or allocating the costs to Otter Tail's North Dakota jurisdiction.[4] The JCOSS itself is part of a single confidential excel file that also contains the CCOSS and uses the same account functionalizations, classifications, and allocators for both cost studies. The JCOSS allocates and directly assigns OTP's functionalized accounts to its four jurisdictions, Minnesota, North Dakota, South Dakota and FERC.[5]

Q. HAVE YOU FOUND ANY ERRORS IN OTP'S TEST YEAR 2024 JCOSS?

A. Yes. There are two errors. The first error is the allocator used to allocate to jurisdictions OTP's MISO revenues. The second error is the classification and allocation method applied to primary and secondary plant and associated O&M expense accounts.

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[1] Direct Testimony of Christy L. Petersen (Petersen Direct), page 3 line 16 to page 5 line 21 and Supplemental Direct Testimony of Christy L. Petersen (Petersen Supplemental Direct), page 11 line 25 to page 12 line 6.
[2] Exh. CLP-1, Sch. 2.
[3] Exh. CLP-1, Sch. 3.
[4] Petersen Direct, page 4 line 19 to page 5 line 21.
[5] Attachment 1 to DR ND-PSC-302_NOTPUBLIC.xlsx, cols. D-K (direct JCOSS); 3_E.03 2024 Test Year ND CCOSS - Supplemental Filing_NOTPUBLIC v2.xlsx, cols. D-K (supplemental JCOSS).

1. ALLOCATION OF MISO REVENUES

Q. WHAT IS THE ERROR IN THE ALLOCATION OF MISO REVENUES?

A. Witness Stalboerger states that in the supplemental JCOSS the MISO revenues are allocated to OTP's four jurisdictions using OTP's D2 allocator whereas in the direct JCOSS the MISO revenues were allocated using OTP's NEPIS allocator.[6] The error here is that the D2 allocator is a peak load allocator which has no causal nexus with the operations that generates the MISO revenues.

Q. WHAT ARE THE MISO REVENUES AND WHERE ARE THEY FOUND IN THE JCOSS?

A. The MISO revenues are found on page 8-1 of both the direct and supplemental JCOSSs[7] where they are described as "Load Control and Dispatch" revenues recorded in account 456. OTP reports that these revenues comprise revenues received under (1) various MISO Open Access Transmission Tariff (OATT) transmission service and ancillary services Schedules 1, 7, 8, 9, 24, 26, 26A and 50, (2) facilities service agreements, and (3) unspecified load control and dispatching.[8]

Q. DID OTP CHANGE THE ALLOCATION OF ALL OF THE MISO REVENUES?

A. No. The total MISO revenues are $51,559,870. Of that total only $19,546,874 were previously allocated to OTP's four jurisdictions using OTP's NEPIS allocator and are now allocated using OTP's D2 allocator. The remaining $32,012,996 are directly assigned to OTP's FERC jurisdiction.[9]

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[6] Supplemental Direct Testimony of Amber M. Stalboerger (Stalboerger Supplemental), page 2 line 14 to page 3 line 5.
[7] Direct and supplemental JCOSS, page 8-1 lines 34 and 35.
[8] Exhibit KRP-1, Responses to Data Requests ND-PSC-1101 and ND-PSC-1102.
[9] Exhibit HRP-2, page 1, Response to Data Requests ND-PSC-1103.

Q. WHAT IS THE DIFFERENCE BETWEEN THE D2 AND NEPIS ALLOCATORS.

A. The D2 allocator is a system peak demand or capacity factor that is based on OTP's annual six-hour transmission peak kilowatt (kW) demand.[10] In the direct JCOSS D2 calculates the percentage that each jurisdiction's demand contributes to OTP's system peak demand.[11] In the direct JCOSS D2 is used to allocate transmission plant.[12] In the supplemental JCOSS D2 is also used to allocate the MISO revenues.[13]

The NEPIS allocator is a net plant factor that is based on OTP's total net plant (production, transmission, distribution, and general).[14] In both the direct and supplemental JCOSSs NEPIS calculates the percentage of each jurisdiction's net electric plant to OTP's system net electric plant.[15] In the supplemental JCOSS NEPIS is used to allocate prepayments,[16] customer advances,[17] rent from electric property,[18] other miscellaneous electric revenue,[19] outside services,[20] property insurance,[21] injuries & damages,[22] federal taxes[23] and Schedule M adjustments.[24] In the direct JCOSS, NEPIS is also used to allocate the MISO revenues.[25]

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[10] Exhibit KRP-3, Response to Data Requests ND-PSC-1104.
[11] See direct and supplemental JCOSS, page 15-1 lines 10 and 11.
[12] See direct JCOSS, page 31, lines 21, 23 and 43; page 4-1 lines 12 and 47; page 5-1, lines 3, 13, 24 and 38.
[13] See supplemental JCOSS, page 8-1 line 34.
[14] Exhibit KRP-3, Response to Data Requests ND-PSC-1104.
[15] See direct and supplemental JCOSS, page 16-1 lines 15 and 16.
[16] See supplemental JCOSS, page 5-1 line 51.
[17] See supplemental JCOSS, page 5-1 line 53.
[18] See supplemental JCOSS, page 8-1 line 25.
[19] See supplemental JCOSS, page 8-1 line 28.
[20] See supplemental JCOSS, page 10-1 line 28.
[21] See supplemental JCOSS page 10-1 line 30.
[22] See supplemental JCOSS, page 10-1 line 32.
[23] See supplemental JCOSS, page 12-1 line 26.
[24] See supplemental JCOSS, page 13-1 line 9 and 10.
[25] See direct JCOSS, page 8-1 line 34.

Q. IS THERE A CAUSAL NEXUS BETWEEN THE MISO REVENUES AND THE NEPIS ALLOCATOR?

A. Yes. The causal nexus is the fact that the services that produce the MISO revenues[26] are delivered using the totality of OTP's electric plant.

Q. IS THERE A CAUSAL NEXUS BETWEEN THE MISO REVENUES AND THE D2 ALLOCATOR?

A. Only a very minor one, insofar as the D2 allocator is used to allocate transmission plant and is to that extent a minor component of the NEPIS allocator.

Q. WHAT IS YOUR CONCLUSION REGARDING THE ALLOCATION OF THE MISO REVENUES?

A. I conclude that the NEPIS allocator is the appropriate allocator for the NEPIS revenues because it reflects the totality of the causal nexus underlying the MISO revenues.

Q. WHAT IS THE IMPACT OF REINSTATED THE NEPIS ALLOCATOR IN THE SUPPLEMENTAL JCOSS?

A. Reinstating the NEPIS allocator for the MISO revenues increases the MISO revenues allocated to OTP's North Dakota jurisdiction by $724,490 ($8,385,926[27] - $7,661,436[28]). I have recommended that witness Mugrace account for this increase in North Dakota MISO revenues in his revenue requirement.

[26] Exhibit KRP-1, Response to Data Requests ND-PSC-1101.
[27] See Direct JCOSS page 8-1 line 34.
[28] See Supplemental JCOSS page 8-1 line 34.

2. CLASSIFICATION OF PRIMARY AND SECONDARY PLANT AND EXPENSES

Q. WHAT IS THE ERROR IN THE CLASSIFICATION AND ALLOCATION OF PRIMARY AND SECONDARY PLANT AND ASSOCIATED O&M EXPENSE ACCOUNTS?

A. The JCOSS uses the minimum size system method to classify and allocate to jurisdictions distribution primary and secondary plant and associated O&M expense accounts. As I demonstrate below regarding the CCOSS, there is no basis in theory or practice supporting the use of the minimum-size system method to classify and allocate primary and secondary plant and associated O&M expense accounts in regulatory cost studies.

B. <u>OTP'S NORTH DAKOTA CLASS COST OF SERVICE STUDY</u>

Q. HAVE YOU EXAMINED OTP 'S NORTH DAKOTA CLASS COST OF SERVICE STUDY?

A. Yes. The testimony[29] and exhibits of Amber M. Stalboerger present (1) the class cost allocation manual[30] and (2) the top line results of the embedded class cost of service study (CCOSS).[31] The CCOSS also follows the standard approach of functionalizing, classifying, and then as appropriate directly assigning or allocating the JCOSS North Dakota costs to Otter Tail's North Dakota customer classes.[32] The CCOSS uses allocators based on energy, demand and customer service characteristics.[33] As I noted above, the CCOSS uses the

[29] Direct Testimony of Amber M. Stalboerger (Stalboerger Direct), page 2 line 4 to page 10 line 4.
[30] Exh. AMS-1, Schs. 2-3.
[31] Exh. AMS-1, Sch. 6.
[32] Attachment 1 to DR ND-PSC-302_NOTPUBLIC.xlsx, excel columns M - Z.
[33] Stalboerger Direct, page 7 line 15 to page 10 line 4 and Exhibit AMS-1, Schedule 2, pages 2-14.

minimum-size System method to classify the distribution primary and secondary plant and O&M expense as consisting of both a customer-related component and a demand-related component.[34] The customer component is allocated to classes on the number of customers in the classes; the demand component is allocated to classes on coincident and non-coincident demand factors.

Q. WHAT FACILITIES ARE CONTAINED IN OTP'S DISTRIBUTION PRIMARY AND SECONDARY PLANT ACCOUNTS?

A. OTP's primary and secondary plant accounts contain costs associated with the overhead and underground wires, supporting structures, line transformers and service lines that connect the distribution system to meters and other installations at customer premises. Typically electric utilities classify service lines as wholly customer-related, but OTP applies the minimum size system method to classify services as well. This is unusual, but not unheard of.

Q. WHAT IS THE MINIMUM-SIZE SYSTEM METHOD OF CLASSIFICATION AND ALLOCATION?

A. It is one of two methods for classification of distribution costs that are described in the NARUC Electric Utility Cost Allocation Manual: (1) the minimum-size method,[35] which OTP uses and (2) the minimum-intercept method.[36] The objective of the minimum-size method is to classify distribution plant and associated operating costs to determine the cost driver of each rate base item and operating cost — namely demand or customers — and allocate the plant and operating costs purportedly consistent with the principle of cost

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[34] Exhibit CLP-1 Schedule 2, page 5 and Exhibit AMS-1, Schedule 2, pages 15 – 19 (Appendix A-1).

[35] National Association of Regulatory Utility Commissioners (NARUC) Electric Utility Cost Allocation Manual (NARUC Manual) 1992, pages 90-92.

[36] NARUC Manual, pages 92-94.

causation. OTP applies the minimum-size method to plant accounts 364, 365, 366, 367, 368 and 369 and O&M accounts 580-581, 583-584, 588, 590, 593-595, and 598. The minimum-size system method assumes that a minimum-size distribution system can be built to serve the minimum loading requirements of the system's customers.[37] This assumption is addressed below. The NARUC Manual describes how to calculate the minimum size and cost of a given distribution system.[38] The calculated minimum size system costs for each distribution plant type are classified as customer-related and allocated to classes based on the number of customers. The remaining cost of each plant type is classified as demand-related and allocated based on demand.

Q. HAVE YOU IDENTIFIED ANY COST CLASSIFICATION ERRORS IN THE CCOSS?

A. Yes. In the classification step, as I noted above, OTP uses the minimum-size system method to classify the primary and secondary portions of distribution plant and associated O&M accounts[39] as both demand-related and customer-related. Classifying any portion of these distribution accounts as customer-related contravenes the principle of cost causation, which is the guiding principle of all regulated utility cost of service studies.[40]

Q. WHAT SUPPORT DOES OTP OFFER FOR ITS USE OF THE MINIMUM-SIZE METHOD OF CLASSIFICATION?

A. Neither witness Petersen nor witness Stalboerger even mention in testimony the minimum size system method. The only substantive references to OTP's minimum-size system occur in the flow chart depictions of OTP's JCOSS and CCOSS costing process in Exhibit CLP-1,

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[37] NARUC Manual, page 90.
[38] NARUC Manual, pages 91-92.
[39] Exhibit AMS-1, Schedule 2, pages 15 – 19 (Appendix A-1).
[40] NARUC Manual, pages 12-13.

Schedule 2[41] and in Exhibit AMS-1, Schedule 2.[42] None of these references provide support or evidence for the assumption that the minimum-size system is a cost causative basis for classification of distribution primary and secondary plant costs and associated O&M expenses.

Q. ARE YOU RECOMMENDING REVISIONS TO OTP'S MINIMUM SIZE SYSTEM METHOD USED IN THE CCOSS?

A. No. As I explain below. I am recommending that OTP's minimum size classification of a portion of its distribution costs as customer-related be rejected, because OTP has not provided any quantitative evidence that customers are in fact the cause or driver of any portion of its distribution costs.

Q. IS THE MINIMUM SIZE METHOD COMMONLY USED BY ELECTRIC UTILITIES?

A. At the time that the NARUC Manual was written, the minimum-size method was commonly used by electric utilities in North America, hence its inclusion in the NARUC Manual, which has not been revised since 1992. Today, however, it is less used by major electric utilities. For example, none of the Exelon electric operations use the minimum-size method.

[41] Exhibit CLP-1, Schedule 2 pages 2-4, 6, 8, 11 and 14.
[42] Exhibit AMS-1, Schedule 2, pages 3, 5, 13 and 15-19.

Q. IS THE COMMON USE OF THE MINIMUM-SIZE METHOD OF CLASSIFICATION RELEVANT TO DETERMINING THE PROPER CLASSIFICATION OF DISTRIBUTION SYSTEM COSTS FOR OTP IN THIS PROCEEDING?

A. No. Selection of the appropriate classification method(s) for a utility's electric distribution system for costing purposes depends on the specific design and operating characteristics of the distribution system consistent with the principle of cost causation, not on whether other utilities in other jurisdiction use a specific classification method nor on whether the utility has used a specific classification method in prior proceedings. Regulatory costing is a forward-looking exercise. The only relevant question is whether the classification method reflects the cost causation inherent in the design and operation of OTP's distribution system. Again, as I demonstrate below, the minimum-size method of classification does not reflect the design and operation of OTP's distribution system.

Q. WHAT DISTRIBUTION COSTS ARE CAUSED BY CUSTOMERS?

A. Principles of Public Utility Rates (Bonbright), the canonical regulatory rate making text, defines electric distribution customer costs as "those operating and capital costs found to vary with the number of customers."[43] Bonbright points out that the distribution system costs that satisfy this definition are "the minimum service, metering, accounting, etc. costs of connecting another customer or the savings in costs of not connecting the customer," viz., the costs of the customer equipment recorded in plant accounts 369-371 Thus, this is not an arbitrary or theory-driven definition, but rather a definition based on a practical and

[43] Principles of Public Utility Rates 1988 (Bonbright), page 490; NARUC Electric Manual, page 90.

empirically verifiable cause – namely, the act of adding a customer to or dropping a customer from the distribution system.

Q. DOES BONBRIGHT ADDRESS THE NARUC MANUAL'S MINIMUM-SIZE AND MINIMUM-INTERCEPT CLASSIFICATION OF DISTRIBUTION COSTS?

A. Yes. Bonbright describes both methods as assuming "hypothetical" and "phantom" distribution systems that rest on the erroneous assumption that "since [the minimum system costs] vary directly with the area of the distribution system (or else with the lengths of the lines, depending on the type of distribution system), they therefore vary directly with the number of customers," which "makes no allowance for the density factor (customers per linear mile or square mile)."[44] In simpler terms, the costs of distribution primary and secondary accounts for a given system will be the same if the system serves X number of customers or 2X number of customers. Electric utilities design the components of their distribution system that are upstream of the equipment required to connect a customer to the system to meet the aggregate peak demand of the customers on the system. Otherwise, the utility would not be able to deliver firm service to customers at system peak demand. Regarding the minimum-intercept system, Bonbright adds that a systematic regression analysis found no statistical association between distribution costs and number of customers.[45] I note that I have never seen an analysis of empirical utility data that demonstrates either that distribution system costs vary with the number of customers on a distribution system or that there is a statistically significant correlation between distribution system costs and the number of customers.

[44] Bonbright, page 491.
[45] Bonbright, page 491.

Q. DOES OTP DESIGN AND OPERATE ITS DISTRIBUTION SYSTEM BASED ON THE NUMBER OF CUSTOMERS?

A. No. In data request ND-PSC-701, I asked OTP for "all internal documents regarding OTP's distribution system planning, design and operating standards and procedures for plant accounts 364-369.1." In response OTP provided (1) a public response,[46], (2) a not public document setting forth OTP's distribution study steps,[47] and (3) four not public distribution study reports.[48] Per the public response the factors OTP considers in the design and operation of extensions of distribution system or new load on existing distribution substations are MW or kW load, voltage, amperage, cable ratings, available fault current, load dynamic characteristics, and length of delivery runs (studies). These factors are confirmed in both the distribution study steps document and the example distribution studies.

> "The first step in sizing the delivery system is understanding the size of the load and its characteristics. With a MW or kW size and operating voltage, engineers can determine minimum amperage needs based on simple engineering calculations. From there, engineers size equipment according to manufacture ratings and industry standards. Underground cable ratings are provided by ICEA or AEIC and overhead cable ratings are provided by IEEE and ANSI standards. Distribution amperage by cable size is in our construction standards book. Lastly, all equipment that has a nameplate provided will give engineers an amperage value to plan for. Additionally, customer service center area engineers review the substation loading reports when

[46] Exhibit KRP-4 - DR ND-PSC-701_PUBLIC.
[47] Exhibit KRP-5 - DR ND-PSC-701_NOT PUBLIC Attachment 1, pages 1-2.
[48] Exhibit KRP-6 - DR ND-PSC-701_NOT PUBLIC Attachment 2.

there is a potential future expansion or new load to be connected to an existing substation. If the substation is close to its nameplate capacity, a formal distribution study will be performed. Area engineers use the report to determine on a case-by-case basis if an upgrade is necessary, or if the existing equipment can support the requested load. Finaly, other things that come into play when sizing a delivery system include available fault current, load dynamic characteristics, length of delivery runs (studies), etc."[49] (emphasis added)

None of the documents provided by OTP mention either customers or number of customers connected as factors in the design and operation of OTP's distribution system.

Q. HOW DOES THE NARUC MANUAL DEFINE DISTRIBUTION CUSTOMER COSTS?

A. Consistent with Bonbright. the NARUC Manual defines "the customer component of distribution facilities [as] that portion of costs which varies with the number of customers." The NARUC Manual then immediately follows, however, with a *non-sequitur*, viz., the unsupported assertion that "[t]hus, the number of poles, conductors, transformers, services and meters are directly related to the number of customers on the utility's system" (emphasis added).[50] Note that this is exactly the same assumption debunked by Bonbright above. The number of customers directly causes the amount and costs of the customer equipment, not the amount and cost of the distribution system's primary and secondary accounts (overhead and underground wires, supporting structures and line transformers). In this regard, the NARUC Manual is simply wrong. The amounts and costs of the facilities recorded in

[49] Exhibit KRP-4, paragraphs 3 and 4.
[50] NARUC Electric Manual, page 90.

distribution overhead and underground lines are not "directly related to the number of customers." They are rather directly related to the load or demand of customers.

Q. DOES THE NARUC MANUAL PROVIDE ANY EXPLANATION OR DEMONSTRATION THAT A PORTION OF DISTRIBUTION COSTS VARIES WITH OR IS CAUSED BY THE NUMBER OF CUSTOMERS?

A. No. As I explained above, the NARUC Manual simply assumes without explanation or demonstration that the minimum-size method and the minimum-intercept method identify and quantify a portion of distribution costs that varies with or is caused by the number of customers.

Q. HAS OTP PROVIDED ANY EMPIRICAL QUANTITATIVE EVIDENCE THAT ANY PORTION OF ITS DISTRIBUTION SYSTEM COSTS VARY WITH THE NUMBER OF CUSTOMERS?

A. No.

Q. WHAT DO YOU CONCLUDE REGARDING OTP'S USE OF THE MINIMUM-SIZE SYSTEM METHOD TO CLASSIFY A PORTION OF ITS DISTRIBUTION COSTS AS CUSTOMER-RELATED AND ALLOCATE THOSE COSTS TO CUSTOMER CLASSES BASED ON THE NUMBER OF CUSTOMERS?

A. As explained above, there is no basis in theory, system design and operation practice, or empirical quantitative data to support OTP's use of the minimum size system method to classify as customer-related any portion of its distribution primary and secondary costs. OTP's distribution costs do not vary with the number of customers – additions and deletions of customers do not cause those costs to increase or decrease. Thus, I conclude that the

Company's distribution primary and secondary costs are properly classified as 100 percent demand-related and properly allocated to classes using OTP's demand allocation factors.

Q. WHAT IS THE IMPACT ON OTP'S RATE CLASSES OF ELIMINATING THE MINIMUM-SIZE CLASSIFICATION OF OTP'S DISTRIBUTION PRIMARY AND SECONDARY COSTS IN ITS CCOSS?

A. As a general matter, minimum-size classification of distribution costs increases the costs allocated to rate classes with large numbers of customers and decreases costs allocated to rate classes with small numbers of customers. Because the number of customers in a rate class is not a cause or driver of distribution costs, minimum-size classification over allocates costs to rate classes with large numbers of customers and under allocates costs to rate classes with small numbers of customers The effect of this misallocation of costs can be seen by comparing the class rates of return and relative rates of return calculated by OTP's CCOSS to those calculated by eliminating minimum-size classification from OTP's CCOSS. Table 1 below compares the class rates of return and relative rates of return under OTP's CCOSS with and without minimum-size classification. As can be seen, the CCOSS without minimum-size classification, which allocates distribution costs on demand, results in higher rates of return and relative rates of return for the Residential, Other Public Authorities and Controlled Service Off-Peak rate classes and lower rates of return for the Farm, General Service, Large General Service, Irrigation, Outdoor Lighting, Controlled Service Deferred Load, and Controlled Service Interruptible rate classes.

Table 1 - Comparison of Relative Rate of Return by Rate Class Under Current Rates – CCOSS w/ and w/o Minimum-Size Classification				
	OTP CCOSS w/ Minimum-Size[51]		OTP CCOSS w/o Minimum-Size[52]	
Customer Classes	**Rate of Return on Rate Base**	**Relative Rate of Return on Rate Base**	**Rate of Return on Rate Base**	**Relative Rate of Return on Rate Base**
Residential	0.84%	0.29	1.82%	0.62
Farm	2.69%	0.94	2.29%	0.79
General Service	3.19%	1.11	3.16%	1.09
Large General Service	4.38%	1.52	4.08%	1.40
Irrigation	-1.54%	-0.53	-2.43%	-0.83
Outdoor Lighting	9.46%	3.29	9.05%	3.11
Other Public Authorities	-1.35%	-0.47	-1.25%	-0.43
Controlled Service Deferred Load	-1.82%	-0.63	-2.68%	-0.92
Controlled Services Interruptible	3.66%	1.27	1.59%	0.55
Controlled Service Off Peak	21.92%	7.62	22.00%	7.56
Total Company	2.87%	1.00	2.91%	1.00

Q. WHAT IS THE PURPOSE OF THE RELATIVE RATE OF RETURN METRIC?

A. Relative rate of return is the most common metric by which fair cost apportionment is usually measured and evaluated. OTP's CCOSS calculates the overall rate of return for OTP's electric system and the rates of return for each class but does not calculate relative rates of return. I have calculated class relative rates of return by dividing the class rates of return by the overall rate of return. A class relative rate of return of 1.00 indicates that the class is earning the overall rate of return. A class relative rate of return less than 1.00

[51] Exhibit KRP-7.
[52] Exhibit KRP-8.

indicates that the class is underearning or under recovering its cost of service, i.e., the revenue generated by rates is not covering the full cost of service to the class. A class relative rate of return greater than 1.00 indicates that the class is overearning or over recovering its cost of service, i.e., the revenue generated by rates is more than covering the full cost of service to the class. Relative rates of return are used as a guide for allocating the revenue increase to classes so as to move each class closer to full recovery.

Q. HAVE YOU IDENTIFIED ANY ERRORS IN THE COST ALLOCATORS IN OTP'S CCOSS?

A. No.

Q. WHAT DO YOU CONCLUDE AND RECOMMEND REGARDING OTP'S CCOSS?

A. I conclude that OTP's CCOSS produces results inconsistent with the principle of cost causation, because contrary to the minimum-size method's assumption, the number of customers is neither a cause nor a driver of distribution costs. I also conclude that OTP's CCOSS without minimum-size classification produces results consistent with the principle of cost causation, because demand is both the cause and the driver of OTP's electric system costs. I recommend that the Commission adopt the CCOSS without minimum-size classification as a guide for determining OTP's class revenue allocation and tariff rates.

C. OTP'S NORTH DAKOTA CLASS REVENUE RESPONSIBILITY DISTRIBUTION

Q. HAVE YOU EXAMINED OTP'S NORTH DAKOTA CLASS REVENUE RESPONSIBILITY DISTRIBUTION?

A. Yes. The testimony[53] and exhibits of Amber M. Stalboerger present OTP's class revenue responsibility distribution.[54] Witness Stalboerger states that the proposed class revenue responsibilities are based on the CCOSS results but adjusted to meet the objectives of maintaining reasonable rate continuity and mitigating disproportionate or abrupt rate impacts.[55] Table 2 shows OTP's proposed revenue allocation and net bill impacts.

Table 2 - OTP Proposed Revenue Allocation and Net Bill Impact[56]

Line No.	Class	Total Present Revenues	Total Proposed Revenues	Net Bill Increase	Net Bill Impact
1	Residential	$58,824,053	$67,053,714	$8,229,661	13.99%
2	Farms	3,033,835	3,459,237	425,402	14.02%
3	General Service	44,392,699	50,181,717	5,789,018	13.04%
4	Large General Service	80,214,893	88,085,059	7,870,166	9.81%
5	Irrigation	108,408	124,219	15,811	14.58%
6	Lighting	3,647,591	3,423,804	-223,787	-6.14%
7	OPA	1,543,238	1,784,170	240,932	15.61%
8	Controlled Service Deferred Load	2,679,474	2,700,968	21,494	0.80%
9	Controlled Service Interruptible	10,923,448	11,009,527	86,079	0.79%
10	Controlled Service Off-Peak	724,148	731,867	7,719	1.07%
11	Total	$206,091,787	$228,554,282	$22,462,495	10.90%

[53] Stalboerger Direct, page 18 line10 to page 24 line 10; Stalboerger Supplemental Direct, page 4 lines 1-26.
[54] Stalboerger Supplemental Direct, page 5 Table 1.
[55] Stalboerger Supplemental Direct, page 5 Table 1.
[56] Stalboerger Supplemental Direct, page 5 Table 1.

Q. HOW DO OTP'S PROPOSED CLASS REVENUE REQUIREMENTS IMPACT CLASS RATES OF RETURN?

A. Table 3 compares the OTP's proposed rates of return and relative rates of return to the CCOSS calculated rates of return and relative rates of return.

Table 3 - Comparison of CCOSS Relative Rate of Return by Rate Class versus OTP Proposed Revenue Requirements[57]

	OTP CCOSS w/ Minimum-Size		OTP Proposed Class Revenue Requirements	
Customer Classes	**Rate of Return on Rate Base**	**Relative Rate of Return on Rate Base**	**Rate of Return on Rate Base**	**Relative Rate of Return on Rate Base**
Residential	0.84%	0.29	4.65%	0.76
Farm	2.69%	0.94	6.42%	1.05
General Service	3.19%	1.11	6.92%	1.13
Large General Service	4.38%	1.52	7.70%	1.26
Irrigation	-1.54%	-0.53	1.05%	0.17
Outdoor Lighting	9.46%	3.29	7.87%	1.29
Other Public Authorities	-1.35%	-0.47	2.40%	0.39
Controlled Service Deferred Load	-1.82%	-0.63	-1.69%	-0.28
Controlled Services Interruptible	3.66%	1.27	3.90%	0.64
Controlled Service Off Peak	21.92%	7.62	22.66%	3.71
Total Company	2.87%	1.00	6.10%	1.00

Measured by the change in the relative rate of returns, OTP's revenue allocation moves most of the customer classes towards parity, but there are anomalies regarding the General Service and Controlled Services Interruptible classes. General Service sees a marginal movement away from parity (1.11 to 1.13). Controlled Services Interruptible moves from

[57] Exhibit KRP-7.

significantly above parity to significantly below parity (1.27 to 0.64), reversing the over recovery of cost to under recovery of cost.

Q. DO YOU AGREE WITH OTP'S PROPOSED CLASS REVENUE REQUIREMENT?

A. No, for two reasons. First, it is based on OTP's minimum-size CCOSS which, as I explained above, is not consistent with or reflective of actual cost causation. Second, it does not reflect the overall revenue requirement and rate of return presented in Advocacy Staff witness Mugrace's testimony.[58]

Q. HAVE YOU CALCULATED CLASS REVENUE REQUIREMENTS BASED ON WITNESS MUGRACE'S OVERALL REVENUE REQUIREMENT AND OTP'S CCOSS WITHOUT MINIMUM-SIZE SYSTEM CLASSIFICATION?

A. Yes. Tables 4 and 5 show, respectively, the rates of return and relative rates of return results of those calculations and the net class bill impacts that result.

[58] Amended Direct Testimony of Dante Mugrace, Schedule DM-1

Table 4 - Comparison of Relative Rate of Return by Rate Class – CCOSS w/o Minimum-Size Classification and PSC Proposed Class Revenue Requirements[59]				
	OTP CCOSS w/o Minimum-Size		PSC CCOSS Proposed Class Revenue Requirements	
Customer Classes	**Rate of Return on Rate Base**	**Relative Rate of Return on Rate Base**	**Rate of Return on Rate Base**	**Relative Rate of Return on Rate Base**
Residential	1.82%	0.62	4.96%	0.81
Farm	2.29%	0.79	5.45%	0.89
General Service	3.16%	1.09	6.36%	1.04
Large General Service	4.08%	1.40	7.33%	1.20
Irrigation	-2.43%	-0.83	2.54%	0.42
Outdoor Lighting	9.05%	3.11	12.53%	2.05
Other Public Authorities	-1.25%	-0.43	1.31%	0.21
Controlled Service Deferred Load	-2.68%	-0.92	2.81%	0.46
Controlled Services Interruptible	1.59%	0.55	4.71%	0.77
Controlled Service Off Peak	22.00%	7.56	26.10%	4.28
Total Company	2.91%	1.00	6.10%	1.00

Measured by the change in relative rate of return, all of the customer classes move significantly toward parity, i.e., significantly reducing the over and under recovery in each case. None of the customer classes flip from over recovery to under recovery of costs or from under recovery to over recovery of costs.

As can be seen in Table 5, compared to OTP's revenue allocation (Table 2 above), none of the customer classes have net bill impacts that would be unreasonably excessive considering the two classes with the largest net bill impact seriously under recover under the Company's position and, after adjustment, are still under recovering.

[59] Exhibit KRP-8

Table 5 - PSC Proposed Revenue Allocation and Net Bill Impact[60]

Line No.	Class	Total Present Revenues	Total Proposed Revenues	Net Bill Increase	Net Bill Impact
1	Residential	$58,824,053	$62,842,466	$4,018,413	6.83%
2	Farms	3,033,835	3,268,988	235,153	7.75%
3	General Service	44,392,699	46,852,679	2,459,980	5.54%
4	Large General Service	80,214,893	83,097,244	2,882,351	3.59%
5	Irrigation	108,408	157,909	49,501	45.66%
6	Lighting	3,647,591	3,508,450	-139,141	-3.81%
7	OPA	1,543,238	1,736,930	193,692	12.55%
8	Controlled Service Deferred Load	2,679,474	4,182,490	1,503,016	56.09%
9	Controlled Service Interruptible	10,923,448	12,021,101	1,097,653	10.05%
10	Controlled Service Off-Peak	724,148	656,907	-67,241	-9.29%
11	Total	$206,091,787	$218,325,165	$12,233,378	5.94%

Q. WHAT DO YOU CONCLUDE AND RECOMMEND REGARDING OTP'S REVENUE ALLOCATION?

A. I conclude that OTP's proposed class revenue allocation should be rejected because (1) it is based on a CCOSS that is inconsistent with the principle of cost causation and (2) even on that basis it does not produce consistent movement towards parity in cost recovery. I recommend that the Commission accept Advocacy Staff's class revenue allocation because it is based on a CCOSS that is consistent with the principle of cost causation and (2) produces consistent movement towards parity in cost recovery.

[60] Exhibit KRP-8.

D. OTP'S NORTH DAKOTA RATE DESIGN

Q. HAVE YOU EXAMINED OTP'S NORTH DAKOTA RATE DESIGN?

A. Yes. The testimony and exhibits of David G. Prazak present (1) the rate design objectives of the proposed rate design and rates,[61] (2) the roles that the embedded CCOSS and the marginal cost study results play in the proposed rate design and rates,[62] (3) the marginal cost study,[63] and (4) OTP's rate proposals.[64]

Q. IN SUMMARY WHAT IS OTP'S RATE DESIGN PROCESS?

A. OTP begins with the embedded cost class revenue requirements developed by witness Stalboerger.[65] In the case of customer classes that have two or more rate classes, the allocation of the customer class revenue requirement to the rate classes is effected by either (1) applying the marginal cost study results or (2) applying the customer class revenue increase to each of the rate classes.[66] Next the individual rates were restructured in a variety ways to reduce complexity while maintaining flexibility, balance revenue requirement needs and customer needs, and meet changing customer expectations.[67] Finally, for each rate class the customer charge was set approximately at marginal cost, a facilities charge was added, and energy and demand charges were derived from the forecast billing determinants and residual revenue requirement.[68]

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[61] Direct Testimony of David G. Prazak (Prazak Direct), page 2 line 16 to page 3 line 11.
[62] Prazak Direct, page 3 line 12 to page 4 line 28 and page 6 line 21 to page 9 line 19.
[63] Prazak Direct, page 4 line 29 to page 6 line 27and Exh. DGP-1, Schs. 2-3
[64] Prazak Direct, page 9 line 20 to page 55 line 18, Tables 3-24 and Exh. DGP-1, Sch. 4 and Attachment 1 to DR ND-PSC-601_NOTPUBLIC.xlsx.
[65] Prazak Direct, page 3 line 25 to page 4 line 12.
[66] Prazak Direct, page 6 line 21 to page 9 line 13 and Table 2.
[67] Prazak Direct, page 9 line 20 to page 11 line 34.
[68] Prazak Direct, page 12 line 1 to page 51 line 7, Tables 3-24, Figures 1-15 and Attachment 1 to DR ND-PSC-601_NOTPUBLIC.xlsx.

Q. HAVE YOU FOUND ANY ERRORS IN OTP'S RATE DESIGN?

A. I have found no errors in the process itself.

Q. WHAT DO YOU CONCLUDE AND RECOMMEND REGARDING OTP'S REVENUE ALLOCATION?

A. I recommend, however, that OTP's North Dakota rates be based, not on witness Stalboerger's embedded cost class revenue requirements, but rather the embedded cost revenue requirements I recommend above.

E. OTP'S OTHER RATE DESIGN PROPOSALS

Q. ARE THERE OTHER RATE PROPOSALS THAT OTP MAKES?

A. Yes. OTP proposes (1) a Section 5.02 rate formula to recover costs associated with equipment installations under schedules 11.02 Irrigation and 14.02 Bulk Interruptible Service[69] and (2) a Sales Adjustment Rider that would capture the effect of sales changes on base rate jurisdictional allocations and revenues.[70]

Q. WHAT IS YOUR ASSESSMENT OF THE SECTION 5.02 RATE FORMULA?

A. OTP's current practice is to request changes in this rate in a rate case. OTP proposes to change the Section 5.02 rate to a formula rate that would be billed monthly and updated annually using FERC Form 1 inputs to take account of "changing economic conditions." OTP does not provide in testimony, exhibits or the Section 5.02 tariff (1) the actual formula to be used to update the rate, (2) any substantive evidence regarding the need for

[69] Prazak Direct, page 53 line 2 to page 54 line 13.

[70] Stalboerger Direct, page 10 line 5 to page 12 line 5 and Exhibit AMS-1 Sch. 4; see also Direct Testimony of Bruce G, Gerhardson, page 21 line 1 to page 25 line 20.

such an annual adjustment and (3) any substantive evidence of the probable impact on customers.

Q. WHAT IS YOUR RECOMMENDATION REGARDING THE PROPOSED SECTION 5.02 FORMULA RATE?

A. As a matter of regulatory policy, formula rate cost recovery mechanisms in the interim years between rate cases work against the rate of return regulatory model. Formula rate mechanisms reduce the utility's incentive to devise and implement cost reductions in the face of the "changing economic conditions" referenced by witness Prazak. Instead, the utility simply passes through to customers any increase in costs due to changing economic conditions. Moreover, formula cost recovery mechanisms reduce rather than increase regulatory efficiency by requiring additional Commission processing and oversight of utility filings and rate changes. For all these reasons I recommend that the Commission reject OTP's Section 5.02 formula rate.

Q. WHAT IS YOUR ASSESSMENT OF THE SALES ADJUSTMENT RIDER?

A. The Sales Adjustment Rider is in essence a decoupling mechanism to true-up changes in actual versus forecast revenues on an annual basis by providing to customers rider charges (if actual revenues are less than forecast) or credits (if actual revenues are greater than forecast). As with the Section 5.02 rate formula, OTP does not provide in testimony, exhibits or the Section 5.02 tariff (1) the actual formula to be used to update the rate, (2) any substantive evidence regarding the need for such an annual adjustment and (3) any substantive evidence of the probable impact on customers.

Q. WHAT IS YOUR RECOMMENDATION REGARDING THE PROPOSED SALES ADJUSTMENT RIDER?

A. As a matter of regulatory policy, decoupling mechanisms in the interim years between rate cases are problematic. Determination of the justness and reasonableness of decoupling mechanisms depends very much on the details of the true-up calculation and the rider calculation of the charges or credits applied to individual rate classes. As I noted above, none of these details have been provided by OTP. Moreover, decoupling mechanisms reduce rather than increase regulatory efficiency by requiring additional Commission processing and oversight of utility filings and rate changes. For all these reasons I recommend that the Commission reject OTP's Sales Adjustment Rider.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes. However, I reserve the right to submit supplementary testimony on further information received.

STATE OF NORTH DAKOTA

PUBLIC SERVICE COMMISSION

Otter Tail Power Company **2023 Electric Rate Increase** **Application**	**Case No. PU-23-342**

VERIFICATION

STATE OF __MARYLAND____)
) ss.
COUNTY OF _MONTGOMERY_)

Karl Pavlovic, being first duly sworn on oath, deposes and states that he has read the testimony and any exhibits submitted in the above captioned matter under his name, that they were prepared by him or under his direction, that he knows the contents thereof, and that the same are true and correct to the best of his knowledge and belief.

Karl Pavlovic

Subscribed and sworn to before me this 2nd day of October, 2024.

Michelle Price
Notary Public
My Commission Expires: _____

MONTGOMERY CO. MD
PUBLIC
NOTARY
MICHELLE A. PRICE

MICHELLE A. PRICE
NOTARY PUBLIC STATE OF MARYLAND
My Commission Expires March 10, 2025

KARL RICHARD PAVLOVIC, Ph.D.

Education

Purdue University – MA and Ph.D. in Philosophy

Karl-Ruprecht Universität, Heidelberg, Germany – graduate study

Yale University – BA in Philosophy

Positions

Senior Consultant – PCMG and Associates	2015-Present
Senior Consultant – Snavely King Majoros and Associates	2010-2014
Director – FTI Consulting	2008-2010
President – DOXA, Inc	1994-2008
Partner – Snavely King and Associates	1983-1994
Assistant Professor – University of Florida-Gainesville	1978-1983

Professional Experience

Dr. Pavlovic provides clients with economic and policy analyses of commercial operations and expert testimony in support of litigation, negotiation and strategic planning. His analyses and testimony are distinguished by systematic articulation and testing of assumptions, thorough evaluation of data, innovative application of statistical tools and economic principles, and clarity and precision of presentation. Dr. Pavlovic has provided expert testimony on the operations, costs and revenues of gas and electric utilities, the impacts of restructuring wholesale and retail electric markets, effects of mergers, the operation and competitiveness of petroleum and electric markets, the market valuation of crude oil, electric and gas reliability, and the performance of energy efficiency, renewable energy, and peak reduction programs.

Major projects directed by Dr. Pavlovic have included: analytical assistance to counsel and testimony on all aspects of the restructuring of wholesale and retail electric markets in the Eastern Interconnection; technical representation of the District of Columbia People's Counsel on the DC PSC's Pepco Productivity Improvement Working Group and various PJM working groups; impact evaluation study of pilot energy efficiency and renewable energy programs in the District of Columbia; analysis of petroleum markets, expert testimony, and coordination of technical testimony in the Trans-Alaska Pipeline quality bank litigation; Independent Technical Review of the economic models used by the US Army Corps of Engineers for the Ohio River System Investment Plan; assistance to a major independent telephone company in the formulation and implementation of corporate strategic plans, applications for long-distance authority, and settlement negotiations with major domestic and foreign carriers.

By education and professional experience Dr. Pavlovic has expertise in formal and mathematical logic, statistics, economics, financial analysis, econometrics, and computer modeling. With 33 years' experience as a consultant and expert witness, Dr. Pavlovic has in-depth knowledge of commercial and industrial operations in the energy, transportation, and telecommunications industries and is familiar with a wide range of experimental and investigative methods in science and engineering.

Regulatory Projects and Appearances

1. In re: Pittsburgh Water and Sewer Authority General Base Rate Increase Filing (2023) – (Appearance: gas and electric cost of service and rate design on behalf of the Pennsylvania Office of Consumer Advocate)
   PA Public Utility Commission Docket Nos. R-2023-3039920 et al

2. In re: UGI Electric Company General Base Rate Increase Filing (2023) – (Appearance: electric cost of service and rate design on behalf of the Pennsylvania Office of Consumer Advocate)
   PA Public Utility Commission Docket Nos. R-2022-3037368

3. In re: Application of Hawaii Water Service Company, Inc. for Approval of a General Rate Increase for its Pukalani Wastewater Diviion and Certain Tariff Changes (2023) – (Appearance: cost of service and rate design on behalf of the Hawaii Division of Consumer Advocacy)
   HI Public Utilities Commission Docket No. 2022-0186

4. In re: Application of Lanai Water Company, Inc. for Review and Approval of Rate Increases; Revised Rate Schedules; and Changes to its Tariff (2023) – (Appearance: cost of service and rate design on behalf of the Hawaii Division of Consumer Advocacy)
   HI Public Utilities Commission Docket No. 2022-0233

5. In re: Application of Southern Maryland Electric Cooperative, Inc., for Authority to Revise Its Rates and Charges for Electric Service and Certain Rate Design Changes (2023) – (Appearance: cost of service and rate design on behalf of the Maryland Office of the People's Counsel)
   MD PSC Case No. 9688

6. In re: Application of San Diego Gas & Electric Company for Authority to Establish Its Authorized Cost of Capital for Utility Operations for 2023 (2022) – (Appearance: business risk and cost of equity on behalf of Utility Consumers' Action Network)
   CA Public Utilities Commission Application 22-04-012

7. In re: Valley Energy, Inc. General Base Rate Increase Filing (2022) – (Appearance: gas cost of service and rate design on behalf of the Pennsylvania Office of Consumer Advocate)
   PA Public Utility Commission Docket Nos. R-2022-3032300

8. In re: Citizens' Electric Company General Base Rate Increase Filing (2022) – (Appearance: electric cost of service and rate design on behalf of the Pennsylvania Office of Consumer Advocate)
   PA Public Utility Commission Docket Nos. R-2022-3032369

9. In re: PECO Energy Company (Gas Division) General Base Rate Increase Filing (2022) – (Appearance: gas and electric cost of service and rate design on behalf of the Pennsylvania Office of Consumer Advocate)
   PA Public Utility Commission Docket Nos. R-2022-3031113

10. In re: Petition of Eversource Gas Company of Massachusetts d/b/a Eversource Energy for Approval of its 2021 Gas System Enhancement Plan Reconciliation Filing (2022) - (Appearance: prudence/used and useful, accounting, cost of service and rate design on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)
    MA Department of Public Utilities Docket No. D.P.U. 22-GREC-06

11. In re: Petition of Liberty Utilities (New England Natural Gas Company Corp.) d/b/a Liberty for Approval of its 2021 Gas System Enhancement Plan Reconciliation Filing (2022) - (Appearance: prudence/used and useful, accounting, cost of service and rate design on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)
    MA Department of Public Utilities Docket No. D.P.U. 22-GREC-04

12. In re: Petition of Berkshire Gas Company for Approval of its 2021 Gas System Enhancement Plan Reconciliation Filing (2022) - (Appearance: prudence/used and useful, accounting, cost of service and rate design on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)
    MA Department of Public Utilities Docket No. D.P.U. 22-GREC-02

13. In re: Nova Scotia Power 2022-2024 General Rate Application (2022) - (Appearance: cost of service on behalf of the Nova Scotia Utility and Review Board)
    NS UARB M10431

14. In re: the Application of Northern States Power Company for Authority to Increase Rates for Natural Gas Service in North Dakota (2021) - (Appearance: cost of service and rate design on behalf of the North Dakota Public Service Commission Advocacy Staff)
    ND PSC Case No. PU-20-441

15. In re: Application of San Diego Gas & Electric Company for Authority to Establish Its Authorized Cost of Capital for Utility Operations for 2022 and to Reset the Annual Cost of Capital Mechanism (2021) – (Appearance: wildfire risk accounting and ratemaking on behalf of Utility Consumers' Action Network)
    CA Public Utilities Commission Application 21-08-014

16. In re: Petition of HPBS, Inc. for review and approval of Central Scheduling System (CSS) charge increase and revised CSS schedule (2021) – (Appearance: rate design on behalf of the Hawaii Department of Commerce and Consumer Affairs)
    HI DCCA Docket No. PTP-2021-001

17. In re: Petition of NSTAR Gas Company d/b/a Eversource Energy for Approval of its 2020 Gas System Enhancement Plan Reconciliation Filing (2021) - (Assistance to Counsel: prudence/used and useful, accounting, cost of service and rate design on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)
    MA Department of Public Utilities Docket No. D.P.U. 21-GREC-06

18. In re: Petition of Eversource Gas Company of Massachusetts d/b/a Eversource Energy for Approval of its 2020 Gas System Enhancement Plan Reconciliation Filing (2021) - (Assistance to Counsel: prudence/used and useful, accounting, cost of service and rate design on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)
    MA Department of Public Utilities Docket No. D.P.U. 21-GREC-05

19. In re: Petition of Berkshire Gas Company for Approval of its 2020 Gas System Enhancement Plan Reconciliation Filing (2021) - (Assistance to Counsel: prudence/used and useful, accounting, cost of service and rate design on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)
    MA Department of Public Utilities Docket No. D.P.U. 20-GREC-02

20. In re: the Application of Northern States Power Company for Authority to Increase Rates for Electric Service in North Dakota (2021) - (Appearance: cost of service and rate design on behalf of the North Dakota Public Service Commission Advocacy Staff)
    ND PSC Case No. PU-20-441

21. In re: Pike County Light & Power Company 2020 General Base Rate Increase Filing – (Appearance: gas and electric cost of service and rate design on behalf of the Pennsylvania Office of Consumer Advocate)
    PA Public Utility Commission Docket Nos. R-2020-3022134 and R-2020-3022135

22. In re: Young Brothers LLC's Application for Approval of a New Cost of Service Model (2020) – (Appearance: cost of service on behalf of the Hawaii Division of Consumer Advocacy)
    HI Public Utilities Commission Docket No. 2020-0135

23. In re: Petition of NSTAR Gas Company d/b/a Eversource Energy for Approval of its 2019 Gas System Enhancement Plan Reconciliation Filing (2020) - (Assistance to Counsel: prudence/used and useful, accounting, cost of service and rate design on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)
    MA Department of Public Utilities Docket No. D.P.U. 20-GREC-06

24. In re: Petition of Bay State Gas Company d/b/a Columbia Gas of Massachusetts for Approval of its 2019 Gas System Enhancement Plan Reconciliation Filing (2020) - (Assistance to Counsel: prudence/used and useful, accounting, cost of service and rate design on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)
    MA Department of Public Utilities Docket No. D.P.U. 20-GREC-05

25. In re: Petition of Berkshire Gas Company for Approval of its 2019 Gas System Enhancement Plan Reconciliation Filing (2020) - (Assistance to Counsel: prudence/used and useful, accounting, cost of service and rate design on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)
    MA Department of Public Utilities Docket No. D.P.U. 20-GREC-02

26. In re: Pittsburgh Water and Sewer Authority 2020 General Base Rate Increases 2020 – (Appearance: multi-year rate plan and performance-based ratemaking on behalf of the Pennsylvania Office of Consumer Advocate)
    PA Public Utility Commission Docket Nos. R-2020-3017970 and R-2020-3017951

27. In re: Commonwealth Edison Company Petition for approval of a Revision to Integrated Distribution Company Implementation Plan Creation of Rate Residential Time of Use Pricing Pilot ("Rate RTOUP") – On Rehearing (2020) – (Appearance: price signal and customer response on behalf of the Illinois Attorney General)
    IL Commerce Commission Docket Nos. 18-1725/18-1824

28. In re: Hawaii Electric Company, Inc. Application for Approval of a General Rate Increase and Revised Rate Schedules and Rules (2019) - (Appearance: cost of service and rate design on behalf of the Hawaii Division of Consumer Advocacy)
    HI Public Utilities Commission Docket No. 2019-0085

29. In re: Application of San Diego Gas & Electric Company for Authority to: (i) Adjust its Authorized Return on Common Equity, (ii) Adjust its Authorized Embedded Costs of Debt and Preferred Stock, (iii) Adjust its Authorized Capital Structure; (iv) Increase its Overall Rate of Return, (v) Modify its Adopted Cost of Capital Mechanism Structure, and (vi) Revise its Electric Distribution and Gas Rates Accordingly, and for Related Substantive and Procedural Relief (2019) – (Appearance: wildfire risk accounting and ratemaking on behalf of Utility Consumers' Action Network)
    CA Public Utilities Commission Application 19-04-017

30. In re: Proposed Amendments to N.J.A.C. 14:9 Adoption of Water and Sewer Uniform System of Accounts (2019) – (Assistance to counsel: water and sewer accounting on behalf of the Division of Rate Counsel)
    NJ Board of Public Utilities Docket Nos. WX19050612 and WX19050613

31. In re: Petition of Public Service Electric and Gas Company for Approval of Gas Base Rate Adjustments Pursuant to its Gas System Modernization Program (2019) – (Assistance to Counsel: infrastructure replacement accounting)
    NJ Board of Public Utilities Docket No. GE19040522

32. In re: Petition of NSTAR Gas Company d/b/a Eversource Energy for Approval of its 2018 Gas System Enhancement Plan Reconciliation Filing (2019) - (Assistance to Counsel: prudence/used and useful, accounting, cost of service and rate design on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)
    MA Department of Public Utilities Docket No. D.P.U. 19-GREC-06

33. In re: Petition of Bay State Gas Company d/b/a Columbia Gas of Massachusetts for Approval of its 2018 Gas System Enhancement Plan Reconciliation Filing (2019) - (Assistance to Counsel: prudence/used and useful, accounting, cost of service and rate design on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)
    MA Department of Public Utilities Docket No. D.P.U. 19-GREC-05

34. In re: The Application of Potomac Electric Power Company for Adjustments to Its Retail Rates for the Distribution of Electric Energy (2019) – (Appearance: cost of service and rate design on behalf of the Maryland Office of People's Counsel)
    MD Public Service Commission Case No. 9602

35. In re: PECO Energy Company Non-Bypassable Transmission Service Charge (NBT) Semiannual Adjustment (2019) - (Appearance: accounting, cost of service and rate design on behalf of the Pennsylvania Office of Consumer Advocate)
    PA Public Utility Commission Docket No. M-2018-3005860

36. In re: PECO Energy Company Transmission Formula Rate Application (2018) - (Appearance: accounting, cost of service and rate design on behalf of the Pennsylvania Office of Consumer Advocate)
    Federal Energy Regulatory Commission Docket ER17-1519-000

37. In re: Petition of NSTAR Gas Company d/b/a Eversource Energy for Approval of its 2017 Gas System Enhancement Plan Reconciliation Filing (2018) - (Appearance: prudence/used and useful, accounting, cost of service and rate design on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)
    MA Department of Public Utilities Docket No. D.P.U. 18-GREC-06

38. In re: Petition of Bay State Gas Company d/b/a Columbia Gas of Massachusetts for Approval of its 2017 Gas System Enhancement Plan Reconciliation Filing (2018) - (Appearance: prudence/used and useful, accounting, cost of service and rate design on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)
    MA Department of Public Utilities Docket No. D.P.U. 18-GREC-05

39. In re: The Application of the Potomac Edison Company for Adjustments to Its Retail Rates for the Distribution of Electric Energy (2018) – (Appearance: cost of service and rate design on behalf of the Maryland Office of People's Counsel)
    MD Public Service Commission Case No. 9490

40. In re: Rate Applications of Kansas City Power & Light – Missouri and Kansas City Power & Light – Greater Missouri Operations (2018) – (Appearance: consolidated operations, cost of service and rate design on behalf of the Missouri Office of Public Counsel)
    MO Public Service Commission Case Nos. ER-2018-0145 and ER-2018-0146

41. In re: The Application of Potomac Electric Power Company for Adjustments to Its Retail Rates for the Distribution of Electric Energy (2018) – (Appearance: cost of service and rate design on behalf of the Maryland Office of People's Counsel)
    MD Public Service Commission Case No. 9472

42. In re: Mid-Atlantic Interstate Transmission, L.L.C. 2018 Transmission Formula Rate Protocol Filings (2018) - (Analysis and Advice to Counsel: accounting)
    Federal Energy Regulatory Commission Docket ER17-211-000

43. In re: The Gas Company d/b/a Hawaii Gas Application for Approval of Rate Increases and Revised Rate Schedules and Rules (2017) - (Appearance: cost of service and rate design on behalf of the Hawaii Division of Consumer Advocacy)
    HI Public Utilities Commission Docket No. 2017-0105

44. In re: Montana-Dakota Utilities Co., Application to Increase Natural Gas Rates (2017) - (Appearance: cost of service and rate design on behalf of the North Dakota Public Service Commission Staff)
    ND Public Service Commission Case No. PU-12-813

45. In re: The Application of Delmarva Power and Light Company for Adjustments to Its Retail Rates for the Distribution of Electric Energy (2017) – (Appearance: cost of service and rate design on behalf of the Maryland Office of People's Counsel)
    MD Public Service Commission Case No. 9455

46. In re: Petition of NSTAR Gas Company d/b/a Eversource Energy for Approval of its 2016 Gas System Enhancement Plan Reconciliation Filing (2017) - (Appearance: prudence/used and useful and plant accounting on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)
    MA Department of Public Utilities Docket No. D.P.U. 17-GREC-06

47. In re: Petition of Bay State Gas Company d/b/a Columbia Gas of Massachusetts for Approval of its 2016 Gas System Enhancement Plan Reconciliation Filing (2017) - (Appearance: prudence/used and useful and plant accounting on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)
MA Department of Public Utilities Docket No. D.P.U. 17-GREC-05

48. In re: In the matter of the application of Columbia Gas of Maryland, Inc. for Authority to Increase Rates and Charges (2017) - (Appearance: cost of service and rate design on behalf of the Maryland Office of People's Counsel)
MD Public Service Commission Case No. 9447

49. In re: PJM Interconnection, L.L.C. - PECO Energy Company Transmission Formula Rate Application (2017) - (Analysis and Advice to Counsel: accounting, cost of service and rate design)
Federal Energy Regulatory Commission Docket ER17-1519-000

50. In re: Northern Illinois Gas Company d/b/a Nicor Gas Company Proposed General Increase in Gas Rates (2017) - (Appearance: prudence/used and useful and plant accounting re. accelerated asset replacement program on behalf of the Illinois Citizens Utility Board)
IL Commerce Commission Docket No. 17-0124

51. In re: The Application of Potomac Electric Power Company for Adjustments to Its Retail Rates for the Distribution of Electric Energy (2017) - (Appearance: cost of service and rate design on behalf of the Maryland Office of People's Counsel)
MD Public Service Commission Case No. 9443

52. In re: PJM Interconnection, L.L.C. - Rockland Electric Company Transmission Rate Application (2017) (Analysis and Advice to Counsel: accounting, cost of service and rate design on behalf of the New Jersey Division of Rate Counsel)
Federal Energy Regulatory Commission Docket ER17-856-000

53. In re: PJM Interconnection, L.L.C. - Mid-Atlantic Interstate Transmission, L.L.C. Transmission Formula Rate Application (2016) - (Analysis and Advice to Counsel: accounting, cost of service and rate design on behalf of the Pennsylvania Office of Consumer Advocate)
Federal Energy Regulatory Commission Docket ER17-211-000

54. In re: The Application of Delmarva Power and Light Company for Adjustments to Its Retail Rates for the Distribution of Electric Energy (2016) – (Appearance: cost of service and rate design on behalf of the Maryland Office of People's Counsel)
MD Public Service Commission Case No. 9424

55. In re: The Application of Potomac Electric Power Company for Adjustments to Its Retail Rates for the Distribution of Electric Energy (2016) – (Appearance: cost of service and rate design on behalf of the Maryland Office of People's Counsel)
MD Public Service Commission Case No. 9418

56. In re: Petition of Fitchburg Gas and Electric Light Company d/b/a Unitil for Approval of its 2015 Gas System Enhancement Plan Reconciliation Filing (2016) - (Analysis and Advice to Counsel: prudence/used and useful and plant accounting on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)
MA Department of Public Utilities Docket No. D.P.U. 16-GREC-01

57. In re: Petition of Bay State Gas Company d/b/a Columbia Gas of Massachusetts for Approval of its 2015 Gas System Enhancement Plan Reconciliation Filing (2016) - (Appearance: prudence/used and useful and plant accounting on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)
MA Department of Public Utilities Docket No. D.P.U. 16-GREC-05

58. In re: Petition for Approval of Gas Infrastructure Contract Between Public Service Company of New Hampshire d/b/a Eversource Energy and Algonquin Gas Transmission, LLC (2016) - (Appearance: compliance with statutes and regulations, prudence, cost/benefit, and ratemaking on behalf of the New Hampshire Office of Consumer Advocate)
NH Public Utilities Commission Docket No. DE 16-241

59. In re: Central Maine Power Company, Annual Compliance Filing and Price Change (2016) - (Analysis and Advice to Counsel: tax normalization regulatory asset on behalf of the Maine Office of the Public Advocate)
ME Public Service Commission Docket No. 2016-00035

60. In re: Bulletin 2015-10 Generic Proceeding to Establish Parameters for the Next Generation PBR Plans (2016) - (Appearance: productivity adjustments/performance based ratemaking on behalf of the Alberta Utilities Consumer Advocate)
Alberta Utilities Commission Proceeding 20414

61. In re: Emera Maine, Proposed Rate Increase in Rates (2016) - (Analysis and Advice to to Counsel: evaluation of management audit of implementation of Customer Information System on behalf of the Maine Office of the Public Advocate)
ME Public Service Commission Docket No. 2015-00360

62. In re: The Merger of the Southern Company and AGL Resources Inc.- Joint Application of the Southern Company, AGL Resources Inc., and Pivotal Utility Holdings, Inc., d/b/a Elkton Gas (2015-2016) - (Appearance: earnings, synergy savings, rates, operations, supply procurement, safety, and reliability on behalf of the Maryland Office of People's Counsel)
MD Public Service Commission Case No. 9404

63. In re: Petition of Bay State Gas Company d/b/a Columbia Gas of Massachusetts for Approval of Firm Transportation Agreements with Millennium Pipeline Company, LLC (2015-2016) - (Analysis, Advice to Counsel, and Assistance on Brief: compliance with gas supply plan, rates, and reliability on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)
    MA Department of Public Utilities Docket No. D.P.U. 15-142

64. In re: Petition of Boston Gas Company and Colonial Gas Company d/b/a National Grid for Approval of Precedent Agreements with Millennium Pipeline Company, LLC (2015-2016)
    - (Analysis, Advice to Counsel, and Assistance on Brief: compliance with gas supply plan, rates, and reliability on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)
    MA Department of Public Utilities Docket No. D.P.U. 15-130

65. In re: Petition of Boston Gas Company and Colonial Gas Company d/b/a National Grid for Approval of Agreements for LNG or Liquefaction Services with GDF Suez Gas NA, LLC; Northeast Energy Center, LLC; Gaz Metro LNG, L.P.; and National Grid LNG (2015- 2016) - (Analysis and Advice to Counsel: compliance with gas supply plan, rates, and reliability on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)
    MA Department of Public Utilities Docket No. D.P.U. 15-129

66. In re: Columbia Gas of Massachusetts CY2014 Targeted Infrastructure Reinvestment Factor Compliance Filing (2015) - (Appearance: PBR tracker design/rates, prudence/used and useful, plant accounting on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)
    MA Department of Public Utilities Docket No. D.P.U. 15-55

67. ENMAX Energy Corporation (EEC) 2015-2016 Regulated Rate Option Non-Energy Tariff Application (2015-2016) - (Appearance: cost allocation, rate design, non-energy risk on behalf of the Alberta Utilities Consumer Advocate)
    Alberta Utilities Commission Proceeding 20480

68. In the Matter of the Merger of Exelon Corporation and Pepco Holdings, Inc. (2014) - (Advice to Counsel: impact on customers on behalf of the New Jersey Division of Rate Counsel)
    NJ Board of Public Utilities BPU Docket No. EM1406

69. In re: Application of Baltimore Gas and Electric Company For Adjustments To Its Electric and Gas Base Rates (2014) (Analysis and Advice to Counsel in Settlement: earnings, investment tracker, cost allocation and rate design on behalf of the Maryland Office of People's Counsel)
    MD Public Service Commission Case No. 9355

70. In re: Columbia Gas of Massachusetts CY2013 Targeted Infrastructure Reinvestment Factor Compliance Filing (2014) - (Appearance: PBR tracker design/rates, prudence/used and useful, plant accounting on behalf of the Massachusetts Attorney General Office of Ratepayer Advocacy)
    MA Department of Public Utilities Docket No. D.P.U. 14-83

71. In re: Potential Business Combination of Entergy Louisiana, LLC and Entergy Gulf States Louisiana, L.L.C. (2014-2015) - (Analysis and Advice to Counsel: impact on rates and consolidation of rates on behalf of the Louisiana Public Service Commission Staff)
    LA Public Service Commission Docket No.U-33244

72. In the Matter of the Application of Ohio Power Company to Adopt a Final Implementation Plan for the Retail Stability Rider (2014) - (Analysis and Advice to Counsel: rate design)
    OH Public Utilities Commission Case No. 14-1186-EL-RDR

73. In re: Examination of Long-Term Natural Gas Hedging Proposals (2014-2015) - (Analysis and Advice to Counsel: natural gas procurement on behalf of the Louisiana Public Service Commission Staff)
    LA Public Service Commission Docket No.R-32975-LPSC, ex parte

74. In re: 2013 Integrated Resource Planning Process for Southwestern Electric Power Company Pursuant to General Order Dated April, 20, 2012 (2014-2015 - (Analysis and Advice to Counsel: IRP design and evaluation on behalf of the Louisiana Public Service Commission Staff)
    LA Public Service Commission Docket No.I-33013 SWEPCO, ex parte

75. In the Matter of the Application of Columbia Gas of Maryland, Inc. for Authority to Adopt an Infrastructure Replacement Surcharge Mechanism (2013-2014) - (Appearance: PBR tracker design/rates, prudence/used and useful, plant accounting on behalf of the Maryland Office of People's Counsel)
    MD Public Service Commission Case No. 9332

76. In the Matter of the Application of Baltimore Gas and Electric Company for Approval of a Gas System Strategic Infrastructure Development and Enhancement Plan and Accompanying Cost Recovery Mechanism (2013-2014) - (Appearance: PBR tracker design/rates, prudence/used and useful, plant accounting on behalf of the Maryland Office of People's Counsel)
    MD Public Service Commission Case No. 9331

77. In the Matter of the Application of Delmarva Power & Light Company for an Increase in Electric Base Rates and Miscellaneous Tariff Changes (2013-2014) - (Appearance: earnings, investment tracker design/rates, cost allocation and rate design on behalf of the Delaware Public Service Commission Staff)
    DE Public Service Commission Docket No. 13-115

78. In the Matter of the Application of Northern States Power Company for Authority to Increase Rates for Electric Service in North Dakota (2013) - (Appearance: cost allocation and rate design on behalf of the North Dakota Public Service Commission Staff)
ND Public Service Commission Case No. PU-12-813

79. In the Matter of the Application of Columbia Gas of Maryland, Inc. for Authority to Increase Rates and Charges (2013) - (Appearance: expense tracker design/rates and evaluation on behalf of the Maryland Office of People's Counsel)
MD Public Service Commission Case No. 9316

80. In the Matter of the Application of Baltimore Gas and Electric Company for Adjustment in its Electric and Gas Base Rates (2012) - (Appearance: earnings, investment tracker design/rates, cost allocation and rate design on behalf of the Maryland Office of People's Counsel)
MD Public Service Commission Case No. 9299

81. In the Matter of the Application of Delmarva Power & Light Company for an Increase in Electric Base Rates and Miscellaneous Tariff Changes (2012) - (Appearance: earnings, investment tracker design/rates, cost allocation and rate design on behalf of the Delaware Public Service Commission Staff)
DE Public Service Commission Docket No. 11-528

82. ENMAX Energy Corporation (EEC) 2012-2014 Regulated Rate Option Non-Energy Tariff Application (2012-2013) - (Analysis and Advice to Counsel: rate design and non-energy risk on behalf of the Alberta Utilities Consumer Advocate)
Alberta Utilities Commission Application #1608745 Proceeding 2069

83. In the Matter of the Petition of Atlantic City Electric Company for Approval of Amendments to Its Tariff to Provide for an Increase in Rates and Charges for Electric Service Pursuant to *N.J.S.A.* 48:2-21 and *N.J.S.A.* 48:2-21.1 and for Other Appropriate Relief (2011) - (Analysis and Advice to Counsel: depreciation on behalf of the New Jersey Division of Rate Counsel)
NJ Board of Public Utilities Docket No. ER11080469

84. In the Matter of the Application of the Potomac Electric Power Company for Authority to Increase Existing Retail Rates and Charges for Electric Distribution Service (2011) - (Appearance: investment tracker design/rates, cost allocation and rate design on behalf of the People's Counsel for the District of Columbia)
D.C. Public Service Commission Formal Case No. 1087

85. Electric Transmission Formula Rate Annual Informational Filing of Central Maine Power Company (2011) - (Advice to Counsel: formula transmission rates, cost allocation and rate design on behalf of the Maine Attorney General)
Federal Energy Regulatory Commission Docket No. ER09-934-000 (2011)

86. Electric Transmission Formula Rate Annual Informational Filing of Bangor Hydro Electric Company (2011) - (Analysis, Report and Advice to Counsel: formula rate on behalf of the Massachusetts Attorney General)
    Federal Energy Regulatory Commission Docket No. ER09-938-000

87. Pennsylvania Public Utility Commission Office of Consumer Advocate Office of Small Business Advocate v. City of Bethlehem – Bureau of Water (2011) - (Appearance: cost allocation and rate design on behalf of the Pennsylvania Office of Consumer Advocate)
    Pennsylvania PUC Docket Nos. R-2011-2244756, C-2011-2246910, and C-2011- 2248241

88. Southern California Edison Company Transmission Owners Tariff (2011) - (Analysis and Advice to Counsel: depreciation on behalf of M-S-R Public Power Agency)
    Federal Energy Regulatory Commission Docket No. ER11-2061-000

89. In the Matter of the Petition of Kansas City Power & Light Company for Determination of the Ratemaking Principles and Treatment that Will Apply to the Recovery in Rates of the Cost to be Incurred by KCP&L for Certain Electric Generation Facilities under K.S.A. 66- 1239 (2011) - (Appearance: advance determination of prudence on behalf of the Kansas Citizens' Utility Ratepayer Board)
    Kansas Corporation Commission Docket No. 11-KCPE-581-PRE

90. Midwest Independent Transmission System Operator, Inc., and Ameren Illinois Company (2011) - (Analysis and Advice to Counsel: depreciation on behalf of the Wholesale Distribution Service Customer Group)
    Federal Energy Regulatory Commission Docket No. ER11-2788-000

91. Electric Generation Plant Valuation Study (2010-2012) - (Analysis: generation plant valuation)
    California Department of Water Resources

92. Tampa Electric Company Wholesale Power Tariff (2010-2011) - (Analysis and Advice to Counsel: depreciation on behalf of the Orlando Utilities Commission)
    Federal Energy Regulatory Commission Docket No. ER10-2061-000

93. Pacific Gas & Electric Company, Transmission Owner Tariff (2010-2011) - (Analysis and Advice to Counsel: depreciation on behalf of the Transmission Agency of Northern California)
    Federal Energy Regulatory Commission Docket No. ER10-2026-000

94. Natural Gas Price Forecast Model Consulting (2008-2010) - (line of business development) FTI Consulting

95. Impact Evaluation Study of the District of Columbia Department of the Environment's Two-Year Pilot Reliable Energy Trust Fund Programs (2007-2008) - (Appearance: evaluation of implementation and cost effectiveness of energy efficiency, renewable energy, and demand response pilot programs on behalf of the District of Columbia Department of the Environment)
D.C. Public Service Commission Formal Case No. 945

96. In the Matter of the Application of the Potomac Electric Power Company for Authority to Increase Existing Retail Rates and Charges for Electric Distribution Service (2007-2008)- Appearance: cost allocation and rate design on behalf of the People's Counsel for the District of Columbia)
D.C. Public Service Commission Formal Case No. 1053

97. In the Matter of the Investigation of Interconnection Standards in the District of Columbia (2006) - (Analysis and Advice to Counsel: interconnection standards and tariff design on behalf of the People's Counsel for the District of Columbia)
D.C. Public Service Commission Formal Case No. 1050

98. In the Matter of the Investigation into the Omnibus Utility Emergency Amendment Act of 2005, Specifically Regarding the Establishment of the Natural Gas Trust Fund Programs (2006) - (Analysis and Advice to Counsel: program design on behalf of the District of Columbia Department of the Environment)
D.C. Public Service Commission Formal Case No. 1037

99. Emergency Application of the Potomac Electric Power Company For A Certificate of Public Convenience and Necessity To Construct Two 69kV Overhead Transmission Lines and Notice of The Proposed Construction of Two Underground 230kV Transmission Lines (2005-2006) - (Appearance: facilities need on behalf of the People's Counsel for the District of Columbia)
D.C. Public Service Commission Formal Case No. 1044

100. Investigation Into Potomac Electric Power Company's Distribution Service Rates (2003- 2005) - (Appearance: cost allocation and rate design on behalf of the People's Counsel for the District of Columbia)
D.C. Public Service Commission Formal Case No. 1032

101. Investigation of the Feasibility of Removing Pre-Existing Aboveground Utility Lines and Cables and Relocating Them Underground in the District of Columbia (2003) - (Analysis and Advice to Counsel: cost/benefit analysis on behalf of the People's Counsel for the District of Columbia)
D.C. Public Service Commission Formal Case No. 1026

102. Guadalupe L. Garcia v. Ann Veneman, Secretary, US Department of Agriculture (2003- 2006) - (Appearance: statistical analysis on behalf of the Plaintiff)
U.S. District Court for the District of Columbia

103. Mirant Corporation, et al., Debtors (2003-2005) - (Analysis and Advice to Counsel: cost of service on behalf of the People's Counsel for the District of Columbia)
U.S. District Court for the Northern District of Texas

104. Complaint: Office of the People's Counsel of the District of Columbia v. Mirant Americas Energy Marketing, L.P. (2003) - (Analysis and Advice to Counsel: cost of service on behalf of the People's Counsel for the District of Columbia)
Federal Energy Regulatory Commission

105. Investigation into the Effect of the Bankruptcy of Mirant Corporation on Retail Electric Service in the District of Columbia (2003-2005) - (Appearance: customer and rate impact on behalf of the People's Counsel for the District of Columbia)
D.C. Public Service Commission Formal Case No. 1023

106. Development and Designation of Standard Offer Service in the District of Columbia (2003- 2007) - (Appearance: cost of service allocation and rate design on behalf of the People's Counsel for the District of Columbia)
D.C. Public Service Commission Formal Case No. 1017

107. Independent Review Panel, Project Management Plan, Ohio River Main Stem Study (2003- 2005) - (50 year economic simulation model evaluation)
U.S. Army Corps of Engineers

108. Investigation into Affiliated Activities, Promotional Practices, and Codes of Conduct of Regulated Gas and Electric Companies (2002-2004) - (Analysis and Advice to Counsel: cost allocation on behalf of the People's Counsel for the District of Columbia)
D.C. Public Service Commission Formal Case No. 1009

109. Independent Review Panel, Ohio River Main Stem Study, System Investment Plan (2001) - (50 year economic simulation model evaluation)
U.S. Army Corps of Engineers

110. Joint Application of PEPCO and New RC, Inc. for Authorization and Approval of Merger Transaction (2001-2002) - (Appearance: cost allocation and affiliate transactions on behalf of the People's Counsel for the District of Columbia)
D.C. Public Service Commission Formal Case No. 1002

111. Investigation into Explosions Occurring in Underground Distribution Systems of PEPCO (2001-2006) - (Analysis and Advice to Counsel: electric systems operation and planning on behalf of the People's Counsel for the District of Columbia)
D.C. Public Service Commission Formal Case No. 991

112. Pennsylvania-New Jersey-Maryland Power Pool/PJM LLC (ISO/RTO) (2000-2005) - (Member Working Group technical representation on behalf of The People's Counsel for the District of Columbia)

113. Trans Alaska Pipeline System 1996 Quality Bank Complaint Remand (2000-2008) - (Appearance: crude oil valuation and tariff rate design on behalf of ExxonMobil)
   Federal Energy Regulatory Commission

114. Ohio River Main Stem Study, Independent Technical Review (1999) - (50 year economic simulation model evaluation)
   U.S. Army Corps of Engineers

115. Investigation of January 1999 Electric Service Interruption (1999-2004) - (Appearance: emergency response evaluation on behalf of the People's Counsel for the District of Columbia)
   D.C. Public Service Commission Formal Case No. 982

116. Trans Alaska Pipeline System 1996 Quality Bank Complaint Appeal (1998-2000) - (Analysis and Advice to Counsel: technical record below on behalf of ExxonMobil)
   U.S. Court of Appeals for the District of Columbia

117. Electric Retail Competition Investigation (1997-2006) - (Appearance: electric utility restructuring, electric energy procurement, cost allocation and rate design on behalf of the People's Counsel for the District of Columbia)
   D.C. Public Service Commission Formal Case No. 945

118. Trans Alaska Pipeline System 1996 Quality Bank Complaint (1996-1998) - (Appearance: crude oil valuation and tariff rate design on behalf of ExxonMobil)
   Federal Energy Regulatory Commission

119. Trans Alaska Pipeline System 1989 Quality Bank Complaint Remand (1995-1998) - (Appearance: crude oil valuation and tariff rate design on behalf of ExxonMobil)
   Federal Energy Regulatory Commission

120. Prudhoe Bay Unit Operating Agreement Hearings (1995) - (Analysis and Advice to Counsel: cost of service on behalf of ExxonMobil)
   Alaska Oil and Gas Conservation Commission

121. Prudhoe Bay Unit Natural Gas Liquids Hearings (1995) - (Analysis and Advice to Counsel: liquids valuation on behalf of ExxonMobil)
   Alaska Department of Natural Resources/Department of Revenue (1995)

122. Potomac Electric Power Co. 3rd Integrated Least-Cost Plan (1995) - (Appearance: forecast operations and costs on behalf of the People's Counsel for the District of Columbia)
   D.C. Public Service Commission Formal Case No. 917, Phase II

123. All American Pipeline Quality Bank Complaint (1994-1995) - (Appearance: crude oil valuation and tariff rate design on behalf of ExxonMobil)
Federal Energy Regulatory Commission

124. Trans Alaska Pipeline System 1989 Quality Bank Complaint Appeal (1994-1995) - (Analysis and Advice to Counsel: technical record below on behalf of ExxonMobil)
U.S. Court of Appeals for the District of Columbia

125. Investigation of the January 1994 Energy Crisis (1994) - (Appearance: emergency response evaluation on behalf of the People's Counsel for the District of Columbia)
D.C. Public Service Commission Formal Case No. 936

126. Washington Gas Light Co. Gas Rate Case (1994) - (Appearance: cost allocation and rate design on behalf of the People's Counsel for the District of Columbia)
D.C. Public Service Commission Formal Case No. 934

127. Washington Gas Light Co. 3rd Integrated Least-Cost Plan (1994) - (Appearance: forecast operations and costs on behalf of the People's Counsel for the District of Columbia)
D.C. Public Service Commission Formal Case No. 921

128. Potomac Electric Power Co. Electric Rate Case (1993) - (Appearance: cost allocation and rate design on behalf of the People's Counsel for the District of Columbia)
D.C. Public Service Commission Formal Case No. 929

129. Washington Gas Light Co. Gas Rate Case (1993) - (Appearance: cost allocation and rate design on behalf of the People's Counsel for the District of Columbia)
D.C. Public Service Commission Formal Case No. 922

130. Trans Alaska Pipeline System Pumpability Complaint (1992) - (Analysis and Advice to Counsel: cost of service and rate design on behalf of ExxonMobil)
Federal Energy Regulatory Commission

131. Potomac Electric Power Co. 2nd Integrated Least-Cost Plan (1992) - (Appearance: forecast operations and costs on behalf of the People's Counsel for the District of Columbia)
D.C. Public Service Commission Formal Case No. 917

132. Potomac Electric Power Co. Electric Rate Case (1992) - (Appearance: cost allocation and rate design on behalf of the People's Counsel for the District of Columbia)
D.C. Public Service Commission Formal Case No. 912

133. Potomac Electric Power Co. Fuel Clause Audit and Productivity Improvement Plan (1991- 2005) (Analysis, Participation in Technical Sessions, and Advice to Counsel; electric utility plant investment and operating costs productivity and benefit/cost analysis on behalf of the People's Counsel for the District of Columbia)
D.C. Public Service Commission Formal Case No. 766

134. Potomac Electric Power Co. Electric Rate Case (1991) - (Appearance: cost allocation and rate design on behalf of the People's Counsel for the District of Columbia)
D.C. Public Service Commission Formal Case No. 905

135. Anchorage Telephone Utility (1991-1995) - (Analysis and Advice to Counsel: cost of service)
Federal Communications Commission

136. Trans Alaska Pipeline System 1989 Quality Bank Complaint (1990-1993) - (Appearance: crude oil valuation and tariff rate design on behalf of ExxonMobil)
Federal Energy Regulatory Commission

137. Telefonica Larga Distancia de Puerto Rico International Service Tariffs (1990-1992) - (Appearance: cost of service and rate design)
Federal Communications Commission

138. Southern Bell Intrastate Depreciation Study (1989-1990) - (Analysis and Advice to Counsel: telecommunications operation)
Florida Public Service Commission

139. Lake Erie Iron Ore Antitrust Litigation: Erie-Western Pennsylvania Port Authority v. Penn Central et al. (1988-1989) - (Analysis and Advice to Counsel: truck operations and damages on behalf of the Norfolk and Western Railroad)
U.S. District Court for the Eastern District of Pennsylvania

140. Unimar International Chapter 11 Reorganization (1988) - (Analysis and Advice to Counsel: cost of service on behalf of Unsecured Creditors)
U.S. Bankruptcy Court for the Western District of Washington at Seattle

141. National Forest Road Cost Analysis System (1986) - (Analysis: cost allocation system design)
U.S. Department of Agriculture, Forest Service

142. Puerto Rico Telephone Company Long Distance Facilities and Service Applications (1985- 1990) - (Appearance: cost of service and rate design on behalf of the Puerto Rico Telephone Company)
Federal Communications Commission

143. All American Cable and Radio/AT&T de Puerto Rico International Rate Complaint (1985- 1990) - (Appearance: cost of service and rate design on behalf of the Puerto Rico Telephone Company)
Federal Communications Commission

144. Caribbean Telecommunications Facilities Planning Docket (1984-1990) - (Appearance: operations forecast and planning on behalf of the Puerto Rico Telephone Company)
Federal Communications Commission

ND PSC Case No. PU-23-342

Exhibit KRP-1

Responses to Data Request ND-PSC-1101 and ND-PSC-1102

OTTER TAIL POWER COMPANY
Case No: PU-23-342

Response to: ND Public Service Commission
Analyst: Karl Pavlovic
Date Received: September 10, 2024
Date Due: September 24, 2024
Date of Response: September 24, 2024
Responding Witness: Amber Grenier, Manager, Regulatory Economics, 218-739-8728

Data Request:
Refer to the JCOSS file "3_E.03 2024 Test Year ND CCOSS - Supplemental Filing_NOTPUBLIC v2.xlsx," page 8-1 line 34 ("Load Control and Dispatch") columns "Reference" and "Total Company." Please provide

a. a complete definition and explanation of the OTP Load Control and Dispatch services from which the revenues in column Total Company are derived,

b. a copy of the tariff under which the revenues in column Total Company are collected, and

c. the reason why the revenues in column Total Company are referenced as account 456 rather than account 457

Attachments: 1
Attachment 1 to DR ND_PSC_1101.pdf

Response:

a) Load Control and Dispatch revenues consist of the following:
- MISO Schedule 1: Scheduling, System Control and Dispatch Service
- MISO Schedule 7: Long-Term Firm and Short-Term Firm Point-To-Point Transmission Service
- MISO Schedule 8: Non-Firm Point-To-Point Transmission Service
- MISO Schedule 9: Network Integration Transmission Service
- MISO Schedule 50: Annual Interconnection Customer O&M and Overheads Charge Associated with Transmission Owner's Interconnection Facilities
- MISO Schedule 24: Local Balancing Authority Cost Recovery
- MISO Schedule 26: Network Upgrade from Transmission Expansion Plan
- MISO Schedule 26A: Mult-Value Project Usage Rate
- Facility Services Agreement: includes Generator Interconnection Procedures (GIPs) Projects
- Load Control & Dispatching

b) Please see Attachment 1 to DR ND-PSC-1101 for copies of the MISO tariffs under which the MISO revenues are collected.

c) Revenues are recorded in FERC Account 456 and not 457, as MISO is providing the scheduling, system control and dispatching as the Independent System Operator and Regional Transmission Organization. Revenues collected are based on MISO tariffs for the transmission that occurs through OTP's transmission facilities.

OTTER TAIL POWER COMPANY
Case No: PU-23-342

Response to: ND Public Service Commission
Analyst: Karl Pavlovic
Date Received: September 10, 2024
Date Due: September 24, 2024
Date of Response: September 24, 2024
Responding Witness: Amber Grenier, Manager, Regulatory Economics, 218-739-8728

Data Request:
Refer to the JCOSS file "3_E.03 2024 Test Year ND CCOSS - Supplemental Filing_NOTPUBLIC v2.xlsx," page 8-1 line 35 ("Load Control and Dispatch (Direct FERC))") columns "Reference" and "Total Company."

Please provide
a) a complete definition and explanation of the OTP Load Control and Dispatch services from which the revenues in column Total Company are derived,
b) a copy of the tariff under which the revenues in column Total Company are collected, and
c) the reason why the revenues in column Total Company are referenced as account 456 rather than account 457.

Attachments: 0

Response:

a) The revenues in line 35 of page 8-1 of JCOSS file "3_E.03 2024 Test Year ND CCOSS - Supplemental Filing_NOTPUBLIC v2.xlsx" are from the Generator Interconnection Procedures projects and the non-retail share of the MISO Schedule 26 and Schedule 26A revenues. The adjustments to directly assign these revenues to the FERC jurisdiction are described on pages 25 and 26, respectively, in the direct testimony of Ms. Christy Petersen.

b) Please see Attachment 1 to DR ND-PSC-1101.

c) Please see the response to part c of DR ND-PSC-1101.

ND PSC Case No. PU-23-342

Exhibit KRP-2

Response to Data Request ND-PSC-1103

Line No.	--- Ledger Account ---	Total Company 2024 JCOSS Page 8-1, Lines 34 & 35	Percent of Total	Line 34	Percent of Total	Description
1	4561.40450010 - MISO Tariff Revenue-MISO Schedule 1 Revenue	289,206	0.56%	289,206	1.48%	MISO Schedule 1: Scheduling, System Control and Dispatch Service
2	4561.40450070 - MISO Tariff Revenue-MISO Schedule 7 Revenue	761,645	1.48%	761,645	3.90%	MISO Schedule 7: Long-Term Firm and Short-Term Firm Point-To-Point Transmission Service
3	4561.40450080 - MISO Tariff Revenue-MISO Schedule 8 Revenue	457,479	0.89%	457,479	2.34%	MISO Schedule 8: Non-Firm Point-To-Point Transmission Service
4	4561.40450090 - MISO Tariff Revenue-MISO Schedule 9 Revenue	2,536,859	4.92%	2,536,859	12.98%	MISO Schedule 9: Network Integration Transmission Service
5	4560.40450500 - MISO Tariff Revenue-MISO Schedule 50 Revenue	94,841	0.18%	94,841	0.49%	MISO Schedule 50: Annual Interconnection Customer O&M and Overheads Charge Associated with Transmission Owner's Interconnection Facilities
6	4561.41104567 - Other Electric Revenue-Facility Services Agreement Revenue	5,534,807	10.73%	1,599,589	8.18%	Facility Services Agreement: includes Generator Interconnection Procedures (GIPs) Projects
7	4560.41104566 - Other Electric Revenue-Load Control & Dispatching Rev	978,910	1.90%	978,910	5.01%	Load Control & Dispatching
8	4560.40450240 - MISO Tariff Revenue-MISO Schedule 24 Revenue	634,623	1.23%	634,623	3.25%	MISO Schedule 24: Local Balancing Authority Cost Recovery
9	4561.40450262 - MISO Tariff Revenue-MISO Schedule 26 Revenue Estimate	14,255,713	27.65%	4,316,457	22.08%	MISO Schedule 26: Network Upgrade from Transmission Expansion Plan
10	4561.40450267 - MISO Tariff Revenue-MISO Schedule 26A-MVP Revenue Estimate	26,015,787	50.46%	7,877,265	40.30%	MISO Schedule 26A: Mult-Value Project Usage Rate
11	Load Control and Dispatch Revenue	51,559,870	100.00%	19,546,874	100.00%	
12	Adjustment moving GIPS revenue to FERC Jurisdiction	(3,935,218)	71.10%			
13	Adjustment moving non-retail share of Schedule 26/26A revenues to FERC	(28,077,778)	69.72%			
14	Total allocated to SD, ND, MN and FERC Jurisdictions,2024 JCOSS, Page 8-1, Line 34	19,546,874	37.91%			
15	Total direct assigned to FERC Jurisdiction, 2024 JCOSS,Page 8-1, Line 35	32,012,996	62.09%			
16	Acct 456.0 Other Electric Revenues	1,708,374	3.31%	1,708,374	8.74%	
17	Acct 456.1 Revenues From Transmission of Electricty of Others	49,851,496	96.69%	17,838,500	91.26%	

Source: Response to Data Request ND-PSC-1103

Source: Response to Data Request ND-PSC-1101

OTTER TAIL POWER COMPANY
Case No: PU-23-342

Response to: ND Public Service Commission
Analyst: Karl Pavlovic
Date Received: September 10, 2024
Date Due: September 24, 2024
Date of Response: September 24, 2024
Responding Witness: Amber Grenier, Manager, Regulatory Economics, 218-739-8728

Data Request:
Refer to the Supplemental Direct Testimony of Amber M. Stalboerger, page 2 lines 14-17, referencing "MISO revenues." Please confirm referenced MISO revenues are the revenues recorded in page 8-1 line 34, column Total Company of the JCOSS file "3_E.03 2024 Test Year ND CCOSS – Supplemental Filing_NOTPUBLIC v2.xlsx." If not, state where the referenced MISO revenues are found in the JCOSS file "3_E.03 2024 Test Year ND CCOSS - Supplemental Filing_NOTPUBLIC v2.xlsx."

Attachments: 0

Response:

Yes: the revenues discussed in the Supplemental Direct Testimony of Amber M. Stalboerger at page 2 lines 14-17 are shown at page 8-1 line 34, column Total Company of the JCOSS file "3_E.03 2024 Test Year ND CCOSS – Supplemental Filing_NOTPUBLIC v2.xlsx." The table below provides line item detail of the MISO revenues for the 2024 Test Year.

--- Ledger Account ---		Total Company 2024	Percent of Total
4561.40450010 - MISO Tariff Revenue-MISO Schedule 1 Revenue	$	289,206	0.56%
4561.40450070 - MISO Tariff Revenue-MISO Schedule 7 Revenue	$	761,645	1.48%
4561.40450080 - MISO Tariff Revenue-MISO Schedule 8 Revenue	$	457,479	0.89%
4561.40450090 - MISO Tariff Revenue-MISO Schedule 9 Revenue	$	2,536,859	4.92%
4560.40450500 - MISO Tariff Revenue-MISO Schedule 50 Revenue	$	94,841	0.18%
4561.41104567 - Other Electric Revenue-Facility Services Agreement Revenue	$	5,534,807	10.73%
4560.41104566 - Other Electric Revenue-Load Control & Dispatching Rev	$	978,910	1.90%
4560.40450240 - MISO Tariff Revenue-MISO Schedule 24 Revenue	$	634,623	1.23%
4561.40450262 - MISO Tariff Revenue-MISO Schedule 26 Revenue Estimate	$	14,255,713	27.65%
4561.40450267 - MISO Tariff Revenue-MISO Schedule 26A-MVP Revenue Estimate	$	26,015,787	50.46%
Load Control and Dispatch Revenue		51,559,870	
Adjustment moving GIPS revenue to FERC Jurisdiction		(3,935,218)	
Adjustment moving non-retail share of Schedule 26/26A revenues to FERC		(28,077,778)	
		19,546,874	

ND PSC Case No. PU-23-342

Exhibit KRP-3

Response to Data Request ND-PSC-1104

OTTER TAIL POWER COMPANY
Case No: PU-23-342

Response to: ND Public Service Commission
Analyst: Karl Pavlovic
Date Received: September 10, 2024
Date Due: September 24, 2024
Date of Response: September 24, 2024
Responding Witness: Amber Grenier, Manager, Regulatory Economics, 218-739-8728

Data Request:
Refer to the Supplemental Direct Testimony of Amber M. Stalboerger, page 2 lines 14-17, referencing "MISO revenues" and the NEPIS allocation factor in witness Stalboerger's Direct Testimony. Please explain the cost causation that supports allocating the MISO revenues using the NEPIS allocation factor.

Attachments: 0

Response:

To clarify: OTP is recommending that MISO revenues be allocated to jurisdictions using the D2 allocation factor, not the net electric plant in service (NEPIS) allocator. While the Direct Testimony used NEPIS to allocate MISO revenues to jurisdictions, that was in error. MISO revenues are credited to customers through the Transmission Cost Recovery (TCR) Rider, and in that Rider, MISO revenues are allocated to customers based on the D2 allocation factor. As explained in Exhibit___(AMS-1), Schedule 2 (page 2 of 19) and Exhibit___(AMS-1), Schedule 3 (pages 4-5 of 14), the D2 allocator is determined based on contribution to OTP's average annual six-hour transmission peak kilowatt (kW) demand.

ND PSC Case No. PU-23-342

Exhibit KRP-4

ND-PSC-701 PUBLIC

OTTER TAIL POWER COMPANY
Case No: PU-23-342

Response to: ND Public Service Commission
Analyst: Karl Pavlovic
Date Received: June 26, 2024
Date Due: July 11, 2024
Date of Response: August 14, 2024
Responding Witness: Amber Stalboerger, Manager, Regulatory Economics, 218-739-8728

Data Request:
Refer to the Direct Testimony of Amber M. Stalboerger, Exhibit AMS-1, Schedule 2, Appendix A-1 Determination of the demand & Customer Components of the Distribution System." Please provide all internal documents regarding OTP's distribution system planning, design and operating standards and procedures for plant accounts 364-369.1.

Attachments: 1
Attachment 1 to DR ND-PSC-701_PUBLIC

Response:

OTP deems Attachment 1 to DR ND-PSC-701 to be trade secret, proprietary, commercial, or financial information, as defined in N.D.C.C. §§ 44-04-18.4 and 47-25.1-01(4) and subject to restrictions against disclosure and unauthorized use under North Dakota law and the Order on Protection of Information dated January 18, 2024. Specifically, Attachment 1 to DR ND-PSC-701 is an internal OTP process document that derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use. Further, Attachment 1 to DR ND-PSC-701 contains trade secret, proprietary, commercial, or financial information, as defined in N.D.C.C. §§ 44-04-18.4 and 47-25.1-01(4) and is subject to restrictions against disclosure and unauthorized use under North Dakota law and the Order on Protection of Information dated January 18, 2024.

Attachment 1 to DR ND-PSC-701 describes the process by which customer service center area engineers can request a distribution system study. Attachment 1 also describes the methodology used for each study. Otter Tail material and construction standards are also referenced by engineers for design and operating standards for delivery systems.

The first step in sizing the delivery system is understanding the size of the load and its characteristics. With a MW or kW size and operating voltage, engineers can determine **minimum** amperage needs based on simple engineering calculations. From there, engineers size equipment according to manufacture ratings and industry standards. Underground cable ratings are provided by ICEA or AEIC and overhead cable ratings are provided by IEEE and ANSI standards. Distribution amperage by cable size is in our construction standards book. Lastly, all equipment that has a nameplate provided will give engineers an amperage value to plan for.

Additionally, customer service center area engineers review the substation loading reports when there is a potential future expansion or new load to be connected to an existing substation. If the substation is close to its nameplate capacity, a formal distribution study will be performed. Area engineers use the report to determine on a case-by-case basis if an upgrade is necessary, or if the existing equipment can support the requested load. Finaly, other things that come into play when sizing a delivery system include available fault current, load dynamic characteristics, length of delivery runs (studies), etc.

KRP-5

NON-PUBLIC IN ITS ENTIRETY

KRP-6

NON-PUBLIC IN ITS ENTIRETY

ND PSC Case No. PU-23-342

Exhibit KRP-7

OTP Rates of Return

OTP Class Revenue Distribution	North Dakota	Residential	Farms	General Service	*Total* Large General Service	Irrigation	Outdoor Lighting	OPA	Controlled Service Deferred	Controlled Service Interruptible	Controlled Service Off-Peak
Rate Base	695,424,815	215,995,994	11,399,807	155,262,442	237,067,236	612,155	14,072,417	6,423,958	16,470,066	37,083,723	1,037,017
Total Available for Return	19,989,879	1,821,704	306,981	4,956,795	10,384,769	-9,410	1,330,747	-86,935	-300,417	1,358,370	227,275
Rate of Return Earned	2.87%	0.84%	2.69%	3.19%	4.38%	-1.54%	9.46%	-1.35%	-1.82%	3.66%	21.92%
Relative Rate of Return	*1.000*	*0.293*	*0.94*	*1.11*	*1.52*	*-0.53*	*3.29*	*-0.47*	*-0.63*	*1.27*	*7.62*
Rate of Return Requested	7.85%										
Revenue Increase Required	22,462,495	8,229,661	425,402	5,789,018	7,870,166	15,811	-223,787	240,932	21,494	86,079	7,719
Revenue Required	42,452,374	10,051,365	732,383	10,745,813	18,254,935	6,401	1,106,960	153,997	-278,923	1,444,449	234,994
Rate of Return	6.10%	4.65%	6.42%	6.92%	7.70%	1.05%	7.87%	2.40%	-1.69%	3.90%	22.66%
Relative Rate of Return	*0.778*	*0.593*	*0.818*	*0.882*	*0.981*	*0.133*	*1.002*	*0.305*	*-0.216*	*0.496*	*2.887*

ND PSC Case No. PU-23-342

Exhibit KRP-8

PSC Rates of Return

ND PSC Class Revenue Distribution			North Dakota	Residential	Farms	General Service	*Total* Large General Service	Irrigation	Outdoor Lighting	OPA	Controlled Service Deferred	Controlled Service Interruptible	Controlled Service Off-Peak
Rate Base	DM-1		668,327,616	179,717,178	11,612,100	150,409,115	235,836,452	802,436	13,896,116	6,112,548	22,029,720	46,922,608	989,343
Total Available for Return	DM-1		29,090,699	4,888,019	397,654	7,108,358	14,402,706	-29,106	1,880,994	-113,889	-883,761	1,114,240	325,484
Rate of Return Earned			4.35%	2.72%	3.42%	4.73%	6.11%	-3.63%	13.54%	-1.86%	-4.01%	2.37%	32.90%
Relative Rate of Return			*1.000*	*0.625*	*0.79*	*1.09*	*1.40*	*-0.83*	*3.11*	*-0.43*	*-0.92*	*0.55*	*7.56*
Relative Rate of Return Adjusted			1.00	0.81	0.89	1.04	1.20	0.42	2.05	0.21	0.46	0.77	4.28
Rate of Return Adjusted			6.10%	4.96%	5.45%	6.36%	7.33%	2.54%	12.53%	1.31%	2.81%	4.71%	26.10%
Operating Income Required			41,324,077	8,906,432	632,807	9,568,339	17,285,057	20,395	1,741,853	79,803	619,255	2,211,893	258,243
Revenue Increase Required			12,233,378	4,018,413	235,153	2,459,980	2,882,351	49,501	-139,141	193,692	1,503,016	1,097,653	-67,241