BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

Phase II Rebuttal Testimony of Kevin C. Higgins

on behalf of

UAE

Docket No. 22-057-03

October 13, 2022

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REBUTTAL TESTIMONY OF KEVIN C. HIGGINS

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Kevin C. Higgins. My business address is 111 East Broadway, Suite 1200, Salt Lake City, Utah, 84111.

Q. By whom are you employed and in what capacity?

A. I am a Principal in the firm of Energy Strategies, LLC. Energy Strategies is a private consulting firm specializing in economic and policy analysis applicable to energy production, transportation, and consumption.

Q. Are you the same Kevin C. Higgins who prefiled Phase I direct and rebuttal testimony and Phase II direct testimony on behalf of the Utah Association of Energy Users Intervention Group ("UAE") in this proceeding?

A. Yes, I am.

II. OVERVIEW AND CONCLUSIONS

Q. What is the purpose of your Phase II rebuttal testimony in this proceeding?

A. My testimony responds to the Phase II direct testimonies of Division of Public Utilities ("Division") witness Dr. Abdinasir M. Abdulle, Office of Consumer Services ("Office") witness Mr. James W. Daniel, Nucor Steel-Utah ("Nucor") witness Mr. Bradley G. Mullins, and Federal Executive Agencies ("FEA") witness Mr. Brian C. Collins. I also update my class cost allocation results to

align with my recommended revenue requirement as presented in my Phase I rebuttal testimony.

Q. Please summarize your conclusions and recommendations.

A. My testimony offers the following recommendations:

1) I recommend that Dr. Abdulle's and Mr. Daniel's proposals to use actual peak-day usage rather than Design-Day usage to allocate demand-related costs be rejected because this approach does not properly allocate cost responsibility for DEU's system as designed.

2) I recommend that Dr. Abdulle's and Mr. Daniel's proposals to allocate peak demand costs to interruptible usage be rejected because interruptible loads do not contribute to DEU's Design-Day demand costs and would be curtailed on a Design-Day. Moreover, it is fundamentally inconsistent with the Peak and Average method to allocate peak demand costs to interruptible customers.

3) I recommend using a 32.5% Throughput weighting (67.5% Design-Day weighting) for Allocation Factor 230, based on the system load factor calculated using the Design-Day. I recommend that Dr. Abdulle's and Mr. Daniel's alternative throughput weightings be rejected.

4) The alternative cost allocation methods presented by Dr. Abdulle that include Lake Side volumes in cost allocation (Options C and D) should be rejected because Lake Side is subject to a special contract and is appropriately excluded from DEU's cost-of-service study. Moreover, Dr. Abdulle's calculations of system load factor inclusive of Lake Side are mathematically incorrect.

5) Mr. Collins' and Mr. Mullins' proposals to allocate feeder-line system costs based on Design-Day demand have merit, as does Mr. Collins' proposal to allocate large-diameter intermediate high pressure ("IHP") mains on this basis, because these facilities were designed to meet demand on an extremely cold day. The merits of this argument notwithstanding, I continue to recommend a 67.5% Distribution Design-Day / 32.5% Distribution Throughput allocation for large-diameter IHP mains, which will appropriately incorporate a peak-related component while allocating a share of costs to interruptible customers based on the throughput component, consistent with this Commission's longstanding practice.

6) I recommend that Mr. Daniel's proposal to allocate a portion of costs of the Magna liquified natural gas ("LNG") facility to the Transportation Service ("TS") classes be rejected. It is inappropriate to allocate these costs to TS customers, who will not have access to this facility during a supply disruption.

7) The Commission should consider implementing a rate mitigation plan that would temper the dramatic impacts that would otherwise be experienced by certain classes. The need for rate mitigation would be even more critical if certain cost allocation proposals made by Dr. Abdulle or Mr. Daniel are adopted.

8) I provide a summary of the class cost-of-service results using my recommended allocation methods, which are consistent with those recommended in my Phase II direct testimony, at the overall revenue requirement I recommended in my Phase I rebuttal testimony. I recommend that these results be used to guide the revenue

allocation to classes at the overall revenue requirement that the Commission approves in this case.

III. RESPONSES TO COST ALLOCATION ISSUES

Design-Day Versus Actual Peak-Day Factor

Q. How does DEU allocate demand-related costs?

A. DEU classifies 60% of the costs of its feeder system, compressor station, and measuring and regulating station equipment as demand-related and allocates these costs based on Design-Day usage using Allocation Factor 230. DEU allocates the remaining 40% of these costs based on throughput.

Q. Do you support using the Design-Day to allocate demand-related costs?

A. Yes, I agree with DEU that the Design-Day is the appropriate basis for allocating demand-related costs, although I recommend a 67.5% Design-Day weighting, as I discuss later in my testimony.

Q. Please explain Dr. Abdulle's and Mr. Daniel's proposals to use the actual peak-day rather than Design-Day for demand cost allocation.

A. Both Dr. Abdulle for the Division[1] and Mr. Daniel for the Office[2] oppose DEU's use of the Design-Day to allocate peak demand-related costs. Dr. Abdulle presents several cost-of-service alternatives, with his Option B being his preferred method, which allocates demand-related costs using a 3-year average of the actual

[1] Phase II Direct Testimony of Abdinasir M. Abdulle, lines 123-125.
[2] Phase II Direct Testimony of James W. Daniel, lines 175-177.

peak-days in 2019-2021.[3] Mr. Daniel proposes allocating demand-related costs using the test year actual peak-day demand,[4] utilizing the 2021 actual peak-day.

Q. Do you agree with Dr. Abdulle's and Mr. Daniel's proposals to use actual peak-day usage rather than Design-Day usage to allocate peak-related costs?

A. No. The peak-related infrastructure put in place by DEU is designed to ensure that firm customers can continue to receive service on an extremely cold day. Given the essential nature of natural gas service – particularly during cold weather – it is critical that this amount of infrastructure, i.e., level of Design-Day capacity, be in place even if it is not utilized in a typical year, or even for many years in a row. Since the Design-Day capacity is built to meet firm requirements on extremely cold days, it is entirely appropriate that the peak-related costs of the system be allocated in a manner that reflects the expected usage on the Design-Day, as DEU has done.

Dr. Abdulle's and Mr. Daniel's proposals to use actual peak-day usage fail to properly capture the relationship between the Design-Day and expected customer class utilization. For example, the actual peak-day usage in 2021 was 986,622 Dth,[5] while the demand used to determine DEU's Design-Day factor is 1,459,679 Dth.[6] On the actual 2021 peak-day, DEU still had capacity available – i.e., the system was not at its Design-Day level of utilization. In contrast, on the

[3] Phase II Direct Testimony of Abdinasir M. Abdulle, lines 152-161; 211-248.
[4] Phase II Direct Testimony of James W. Daniel, lines 75-77.
[5] DEU Exhibit 4.06. Mr. Daniel's analysis uses actual peak-day usage of 985,405 Dth because he includes 25% of the IS's class's peak-day usage instead of 100%. Based on Mr. Daniel's workpaper, 22-057-03 Daniel Workpaper 1 for OCS - DEU Exh. 4.20 ElctrncMdl 9-15-22, OCS Workpapers tab.
[6] DEU Exhibit 4.05.

Design-Day, interruptible service would be curtailed. The difference between the actual 2021 peak-day demand utilized by Mr. Daniel and the Design-Day demand is 473,057 Dth, or approximately 32% of the Design-Day demand.

Similarly, the 3-year average peak-day demand utilized by Dr. Abdulle is 431,922 Dth less than the Design-Day demand, or approximately 30% of the Design-Day demand.[7]

As these numbers demonstrate, DEU has constructed a system capable of handling significantly more demand than has been required on an actual peak day in the last three years. This additional 30-32% of Design-Day capacity comes at a cost. DEU incurs these additional costs to ensure that DEU's system can continue to provide much-needed natural gas service to firm sales customers on an extremely cold day. If those costs are prudently incurred, the customers who require that this additional capacity be available should pay for it, which means that the capacity costs should be allocated based on usage of the system on the Design Day.

Yet Dr. Abdulle and Mr. Daniel propose to ignore Design-Day demand for the purpose of cost allocation. The cost allocation methods advocated by the Division and the Office are logically inconsistent with their respective revenue requirement positions. The 30-32% of Design-Day capacity that these parties ignore for cost allocation purposes is either (a) plant that is not used and useful and therefore should be disallowed from cost recovery, or (b) plant that is

[7] *See* Phase II Direct Testimony of Abdinasir M. Abdulle, lines 160-161 (Table 3).

necessary to ensure delivery of gas to firm customers during Design-Day conditions and therefore should be allocated to the temperature-sensitive firm customers for whom this incremental capacity was built. Since the Division and the Office are not recommending that 30-32% of the feeder system and related equipment be disallowed, the costs associated with these facilities should properly be allocated on the basis of Design-Day usage.

In sum, Dr. Abdulle's and Mr. Daniel's proposals to use actual peak-day usage rather than Design-Day usage to allocate demand-related costs should be rejected by the Commission because their approach does not properly allocate cost responsibility for DEU's system as designed.

Q. Are there other problems with using actual peak-day usage instead of Design-Day usage for cost allocation?

A. Yes. It appears that the actual peak-day usage employed by Dr. Abdulle and Mr. Daniel does not properly account for customer migration between classes. For example, DEU's cost-of-service analysis and rate design assume that three current TS customers that qualify for the Transportation Bypass Firm ("TBF") rate schedule will move from the TS rate schedule to the TBF rate schedule as a result of this case.[8] However, the actual peak-day usage employed by the Division and the Office does not appear to capture this customer migration, distorting the results for the TBF and TS Large classes.[9] This demonstrates one of the hazards

[8] Direct Testimony of Austin C. Summers, lines 403-409.
[9] Per DEU Exhibit 4.05, TBF's test year Design-Day usage is 64,500 Dth and annual volumes are 9,749,670 Dth. Conversely, according to DEU Response to DPU Data Request 4.05 (DPU Exhibit 4.02 DIR), TBF's 2021 actual peak-day usage was 27,609 Dth and annual volumes were 2,515,154 Dth.

of using actual peak-day usage to allocate DEU's demand-related costs, given that the actual peak-day does not necessarily reflect going-forward usage for the system or individual classes.

Q. Have you identified other errors in Dr. Abdulle's and Mr. Daniel's demand-related cost allocation?

A. Yes. Dr. Abdulle's and Mr. Daniel's cost-of-service models do not allocate accumulated depreciation and accumulated deferred income tax ("ADIT") in a manner consistent with their allocations of gross plant-in-service. Dr. Abdulle[10] and Mr. Daniel[11] allocate the demand-related gross plant associated with the feeder system, compressor station, and measuring and regulating station equipment using actual peak-day usage but allocate the associated *reductions* to rate base (accumulated depreciation and ADIT) using the Design-Day. This error exacerbates the harmful impact of their proposals on the TS classes, which receive a "worst of all worlds" outcome under Dr. Abdulle's and Mr. Daniel's allocations: demand-related gross plant allocated on actual peak-day usage with reductions to rate base allocated on Design-Day usage.

[10] Based on Dr. Abdulle's workpaper, CCOS Results Using 54% 3-year average actual peak and 46% Throughput - Option B, Dist Plant tab.

[11] Based on Mr. Daniel's workpaper, 22-057-03 Daniel Workpaper 1 for OCS - DEU Exh. 4.20 ElctrncMdl 9-15-22, Dist Plant tab. Mr. Daniel also weights the applicable accumulated depreciation and ADIT using DEU's 60% Design-Day / 40% Throughput rather than his recommended 52% Peak / 48% Throughput weighting.

Including Interruptible Usage in the Peak-Day Factor

Q. What position has DEU taken regarding the inclusion of interruptible usage in the peak-day factor?

A. According to the Direct Testimony of DEU witness Mr. Austin C. Summers, DEU does not believe that interruptible customers should be assigned peak demand cost responsibility. As explained by Mr. Summers:

> [I]n an actual Design-Day event, interruptible customers will be curtailed and will not be contributing to the costs incurred on the Design-Day. If interruptible customers choose not to curtail, they will be assessed penalties that will be credited back to firm customers. If interruptible demand is included in the Design-Day Factor Study, the Company will be inappropriately allocating demand costs to the customers it assumes will not be using the system, and consequently not causing demand costs, during a Design-Day event.[12]

Therefore, DEU includes only firm demand in its Design-Day factor. For the TS and TBF classes, the demand included in this allocator is based on the firm contract demand.

Q. Do you agree with DEU that interruptible usage should not be included in the allocation of peak-related costs?

A. Yes. Interruptible usage should not be assigned peak demand cost responsibility because interruptible usage does not contribute to DEU's Design-Day demand costs and would be curtailed on a Design-Day.

Q. Please provide some background on the history of this issue in Utah.

A. The history of this issue is replete with attempts by the Division and the Office to unreasonably shift costs to interruptible customers by assigning peak demand

[12] Direct Testimony of Austin C. Summers, lines 312-318.

costs to them, culminating in a rejection of this effort by the Commission in DEU's last general rate case.

In its 2007 rate case, Docket No. 07-057-13, DEU did not allocate peak-day costs to interruptible loads. In that case, Division witness Mr. Glen Gregory proposed to include interruptible loads in the peak-day factor based on average daily interruptible usage.[13] The Company maintained in its rebuttal testimony that interruptible loads do not add anything to the peak requirement and did not modify its class cost-of-service study in response to the Division's proposal in its rebuttal.[14] I also opposed Mr. Gregory's proposal to include interruptible loads in the peak-day factor in my rebuttal testimony, noting that Allocation Factor 230 already contains a throughput component including interruptible volumes.[15] However, the Commission agreed with the Division's proposal, stating:

> [W]e are persuaded by the Division that interruptible customers contribute to peak demand and therefore these customers should receive some allocation of peak demand in the Company's next cost-of-service study.[16]

In the following rate case, Docket No. 09-057-16, the Company continued to disagree that interruptible customers contribute to the Design-Day demand but complied with the Commission's order by proposing that a portion of peak-day costs be allocated to interruptible loads based on the amount that the design peak-day exceeds the average peak requirements of firm customers.[17] Docket No. 09-

[13] Docket No. 07-057-13, Direct Testimony of Glen Gregory (Division Exhibit 7.0), p. 8.
[14] Docket No. 07-057-13, Rebuttal Testimony of Steven R. Bateson (QGC Exhibit 8.0R), pp. 5-6.
[15] Docket No. 07-057-13, Rebuttal Testimony of Kevin C. Higgins (UAE Exhibit COS 1R), pp. 6-7.
[16] Docket No. 07-057-13, Questar Gas Company 2007 General Rate Case Phase II Order on Cost of Service and Rate Design (Issued: December 22, 2008), p. 31.
[17] Docket No. 09-057-16, Direct Testimony of Steven R. Bateson (QGC Exhibit 4.0), pp. 9-10.

057-16 was resolved through a settlement stipulation that spread the revenue requirement to all service schedules except for FT-1 through a uniform percentage increase without adopting any specific cost-of-service approach.[18]

In its 2013 rate case filing, Docket No. 13-057-05, the Company reiterated that interruptible customers should not be assigned peak demand responsibility and did not include interruptible usage in its peak-day factor.[19] That case was resolved through a partial settlement stipulation that included movement of the TS class toward cost, based on a class cost-of-service study that did not include interruptible load in the peak-day factor.[20] According to the Commission, approval of the Revenue Stipulation was not intended to alter existing Commission policy or to establish Commission precedent.[21]

In its 2016 rate case filing, Docket No. 16-057-13, DEU again did not allocate peak-day costs to interruptible loads.[22] That case was subsequently withdrawn.

In its 2019 rate case filing, Docket No. 19-057-02, DEU continued to maintain that interruptible customers should not be assigned peak demand responsibility.[23] In that case, Mr. Howard E. Lubow[24] for the Division and Mr. Daniel for the Office[25] proposed that interruptible loads be included in the peak-

[18] Docket No. 09-057-16, Report and Order, Issued June 3, 2010.
[19] Docket No. 13-057-05, Direct Testimony of Austin C. Summers, pp. 7-8.
[20] Docket No. 13-057-05, Report and Order, Issued February 21, 2014, p. 7. Partial Settlement Stipulation filed December 13, 2013, Exhibit B (Settlement Stipulation Model).
[21] Docket No. 13-057-05, Report and Order, Issued February 21, 2014, p. 17.
[22] Docket No. 16-057-13, Direct Testimony of Austin C. Summers (QGC Exhibit 4.0), pp. 8-9.
[23] Docket No. 19-057-02, Direct Testimony of Austin C. Summers, lines 212-213.
[24] Docket No. 19-057-02, Direct Testimony of Howard E. Lubow (DPU Exhibit 6.0 DIR), pp. 6-7.
[25] Docket No. 19-057-02, Direct Testimony of James W. Daniel (OCS-4D), pp. 7-9.

day factor based on interruptible usage on the actual peak-day. In its Order, the Commission rejected the Division's and the Office's proposals to allocate demand-related costs to interruptible customers, stating:

> We do not find it reasonable in this case to modify the design day factor in a way that will allocate even more costs to classes that will already receive material rate increases. In addition, given the decreasing number of IS customers in the last several years we do not find it reasonable to allocate additional costs to these customers at this time absent further analysis of the value interruptible customers provide DEU's system.[26]

Q. Have any parties to this case proposed that interruptible usage be included in the peak-day factor?

A. Yes, despite the material rate increases facing TSM and TSL customers in this case, Dr. Abdulle[27] and Mr. Daniel[28] both propose to exacerbate those impacts by recommending that interruptible customers be allocated demand-related costs based on actual peak-day usage. Specifically, Dr. Abdulle recommends including the amount of interruptible usage on the actual peak-day in the allocation factor, while Mr. Daniel proposes that 25% of the Interruptible Sales ("IS") class's actual peak-day demand be included in the allocation factor. Mr. Daniel does not specifically address the allocation of demand-related costs to interruptible load served on the TS classes.

Dr. Abdulle[29] and Mr. Daniel[30] argue that interruptible customers have historically had gas deliveries during actual peak-day conditions.

[26] Docket No. 19-057-02, Report and Order, Issued February 25, 2020, p. 28.
[27] Phase II Direct Testimony of Abdinasir M. Abdulle, lines 140-145.
[28] Phase II Direct Testimony of James W. Daniel, lines 333-343.
[29] Phase II Direct Testimony of Abdinasir M. Abdulle, lines 140-145.
[30] Phase II Direct Testimony of James W. Daniel, lines 344-355.

Q. How do you respond to Dr. Abdulle's and Mr. Daniel's argument that there have been years in which interruptible customers were not interrupted on the peak-day?

A. This argument is beside the point. If the actual peak-day turns out to be significantly milder than the Design-Day, there is no reason to interrupt customers gratuitously. Interruptible service allows DEU to construct a system that is smaller than would otherwise be required to serve customers on the Design-Day.

Q. Do you continue to recommend that interruptible loads not be included in the peak-day factor?

A. Yes. Although some parties maintain that interruption events have occurred relatively infrequently, they nonetheless occur. Moreover, irrespective of the relative frequency of interruption, the fact is that DEU does not include interruptible loads in its Design-Day for planning purposes, and thus does not size its system to serve these loads on the Design-Day. Doing so would require a much larger system than the one that has been built, with consequent higher system costs and economic inefficiency. Since interruptible loads do not cause DEU's peak demand-related costs, they should not be allocated a share of these costs.

Moreover, the very selection of the Peak and Average or similar method in the first place represents a determination that the share of feeder lines and related facilities that is properly allocable to interruptible load is the group's share of throughput weighted by the system load factor. In other words, using throughput as an allocator is the means through which the costs of these facilities are

allocated to customers who do not cause peak-related costs. "Doubling down" by also allocating a share of peak-related costs to interruptible load is inconsistent with the logical basis of the method and is essentially a misapplication of it. Moreover, the approaches recommended by Dr. Abdulle and Mr. Daniel effectively defeat the purpose of utilizing interruptible service to optimize system design and would dilute or negate the price signal to interruptible customers for providing this system benefit.

Design-Day / Throughput Weighting

Q. Please describe DEU's weighted Design-Day / Throughput allocator.

A. As I mentioned previously, DEU's Allocation Factor 230 is designed to be a weighted blend of peak-day (Design-Day) and throughput factors, and is used to allocate feeder system, compressor station, and measuring and regulating station costs, presumably because these facilities are viewed as providing both peak-day and throughput-related services. The weighting used by DEU for Allocation Factor 230 is 60% Design-Day and 40% Throughput. DEU also uses Allocation Factor 230 to allocate the FT1-L (Lake Side) revenue credits to customer classes and to allocate the cost share of the TBF discount to other classes.

Q. Please explain your recommendation regarding the weighting of the Design-Day and throughput components of Allocation Factor 230.

A. I recommend that the throughput weighting for Allocation Factor 230 be based on DEU's system load factor of 32.5%, calculated using the Design-Day. This

produces a weighting for Allocation Factor 230 of 67.5% Design-Day / 32.5% Throughput.

Q. Do any other parties conclude that the throughput weighting should be based on the system load factor?

A. Yes. Both Dr. Abdulle[31] and Mr. Daniel[32] recommend using a measure of "load factor" to weight the throughput component. However, Dr. Abdulle and Mr. Daniel calculate their load factors using actual peak-day usage rather than the more appropriate Design-Day.

Q. What Peak / Throughput weightings do Dr. Abdulle and Mr. Daniel recommend for Allocation Factor 230?

A. Dr. Abdulle presents several alternatives, with his Option B being his preferred method, which uses a 54% 3-Year Average Actual Peak-Day / 46% Throughput weighting.[33] Dr. Abdulle's calculation of the 46% "load factor" is based on the 3-year (2019-2021) average actual peak-day usage of 1,027,757 Dth.[34]

Mr. Daniel recommends a 52% Actual Peak-Day / 48% Throughput weighting, which is based on a 48% "load factor" calculated using the actual 2021 peak-day demand of 986,622 Dth.[35]

[31] Phase II Direct Testimony of Abdinasir M. Abdulle, pp. 9-10.
[32] Phase II Direct Testimony of James W. Daniel, pp. 10-12.
[33] Phase II Direct Testimony of Abdinasir M. Abdulle, pp. 12-15. Dr. Abdulle also argues that Options C and D, which include Lake Side volumes, could be reasonable measures. Option C uses a 59% Design Day / 41% Total Utah Throughput weighting and Option D uses a 42% 3-Year Actual Peak / 58% Total Utah Throughput weighting. I will address these options in the following section of my testimony.
[34] Phase II Direct Testimony of Abdinasir M. Abdulle, p. 10 (Table 4).
[35] Phase II Direct Testimony of James W. Daniel, lines 78-80; 248-255. Mr. Daniel's cost-of-service model uses actual peak-day usage of 985,405 Dth because he includes 25% of the IS's class's peak-day usage instead of 100% (based on Mr. Daniel's workpaper, 22-057-03 Daniel Workpaper 1 for OCS - DEU Exh. 4.20 ElctrncMdl 9-15-22, OCS Workpapers tab).

Both Dr. Abdulle and Mr. Daniel calculate their proposed "load factors" using forecasted 2023 volumes that exclude sales to Lake Side, although as I discuss below, Dr. Abdulle also presents options that include Lake Side (albeit incorrectly) in the load factor calculation.

Q. What is your response to the Peak / Throughput weightings proposed by Dr. Abdulle and Mr. Daniel?

A. I recommend that Dr. Abdulle's and Mr. Daniel's alternative weightings be rejected because they are based upon the actual peak-day rather than the Design-Day. Measuring system load factor relative to the Design-Day is appropriate since the distribution system must be sized to meet the Design-Day capacity. The throughput allocation component should be no greater than the load factor, based on the average utilization of the system relative to the Design-Day.

Q. Do any other parties propose alternative weightings for Allocation Factor 230?

A. Yes. Nucor witness Mr. Bradley G. Mullins[36] and FEA witness Mr. Brian C. Collins[37] both propose that the feeder-line system be allocated 100% on Design-Day demand. As I described above, Allocation Factor 230 is used to allocate the cost of the feeder-line system.

[36] Phase II Direct Testimony of Bradley G. Mullins, lines 268-271.
[37] Phase II Direct Testimony of Brian C. Collins, p. 23, lines 11-14.

Q. What is your response to Mr. Mullins' and Mr. Collins' proposals to use a 100% Design-Day allocation for the feeder-line system?

A. Mr. Mullins' and Mr. Collins' proposals align well with planning criteria. I agree that DEU's feeder-line system must be sized to meet Design-Day demands. In that sense, using a 100% Design-Day allocator has significant merit. The practical difficulty with this approach, however, is that this Commission has had a longstanding policy of allocating a portion of the feeder-line system to interruptible customers through the utilization of an annual volumetric component and Mr. Mullins's and Mr. Collins' proposals would exempt interruptible volumes from any cost allocation of for these facilities. Including a volumetric allocation component provides a means for allocating a share of feeders and related equipment to interruptible customers. Based on my experience, I have concluded this is a necessary ingredient for addressing cost allocation in this jurisdiction.

Q. What weighting do you recommend for Allocation Factor 230?

A. I continue to recommend that the throughput weighting for Allocation Factor 230 be based on DEU's system load factor (calculated using the Design-Day) of 32.5%. This produces a 67.5% Design-Day / 32.5% Throughput weighting and is consistent with the proper application of the Peak and Average method as described in the NARUC Manual.[38]

[38] The Average and Peak Demand method is described in the Gas Distribution Rate Design Manual published by the National Association of Regulatory Utility Commissioners, pp. 27-28, which was provided in UAE Exhibit COS 2.1 to my Phase II direct testimony.

Including Lake Side in Cost Allocation

Q. Please describe the service that DEU provides to the Lake Side Power Plant.

A. DEU provides firm transportation service to PacifiCorp's Lake Side generating facilities under a special contract with PacifiCorp.[39] Since the revenue DEU receives for Lake Side service is governed by contract, Lake Side is not allocated costs in the cost-of-service study. Instead, the revenue received for the Lake Side service is treated as a revenue credit that is allocated to classes using Allocation Factor 230, which reduces the base rate revenue requirement.[40]

Q. Please describe Dr. Abdulle's treatment of Lake Side in cost allocation.

A. Dr. Abdulle presents the results of several cost-of-service alternatives. His preferred method, Option B, does not include Lake Side in cost allocation. However, Dr. Abdulle argues that his Options C and D, which include Lake Side in cost allocation, could also be reasonable measures.[41] In Options C and D, Dr. Abdulle includes the Lake Side throughput in the TBF class throughput that is used to develop the Throughput factor, which Dr. Abdulle terms "Utah Total Dth."

Option C uses a 59% Design-Day / 41% Utah Total Dth weighting and Option D uses a 42% 3-Year Actual Peak / 58% Utah Total Dth weighting.[42]

[39] See Docket No. 12-057-04, Report and Order Issued June 20, 2012.
[40] *See* DEU Exhibit 4.20 Summers Testimony - Electronic Model 5-2-2022, COS Detail TS Split tab, numbered row 106.
[41] Phase II Direct Testimony of Abdinasir M. Abdulle, pp. 12-15.
[42] Phase II Direct Testimony of Abdinasir M. Abdulle, pp. 12-15.

The throughput (Dth) weightings are based on Dr. Abdulle's alternative calculations of "load factor" that include Lake Side throughput.[43]

Q. Do you believe it is appropriate to include Lake Side in the determination of each class's share of throughput costs?

A. No. It is unclear what Dr. Abdulle intends to accomplish in offering Options C and D for the Commission's consideration. The revenue that DEU receives for service to Lake Side is governed by a special contract and is not determined through traditional cost-of-service analysis. It does not appear that the Division is suggesting that DEU attempt to renegotiate the terms of its Lake Side contract with PacifiCorp so it is unclear how the additional costs allocated to Lake Side's load under Options C and D would be recovered.

Options C and D dramatically shift costs to the TBF class, whose billing determinants do not include Lake Side's load. In other words, Dr. Abdulle improperly allocates additional costs to the TBF class for Lake Side's load, even though Lake Side is not served on the standard TBF rate schedule. Dr. Abdulle also continues to reflect the Lake Side revenue credit as a reduction to the base revenue requirement.[44]

Like Option B, Options C and D also inconsistently allocate gross plant and reductions to rate base (accumulated depreciation and ADIT).[45]

[43] Phase II Direct Testimony of Abdinasir M. Abdulle, p. 10 (Table 4).
[44] Based on Dr. Abdulle's workpapers, CCOS Results Using 59% Design Day and 41% Utah Total Dth- Option C and CCOS Results Using 42% 3-year actual peak day and 58% Utah Total Dth- Option D.
[45] See my discussion on page 8 above.

Q. Do you believe that Lake Side's load should be included in the calculation of the system load factor?

A. No. Since Lake Side is not included in the standard cost-of-service study in the first instance, the load factor used for cost allocation purposes should not include Lake Side.

Q. Are there other problems with Dr. Abdulle's Lake Side calculations?

A. Yes. Dr. Abdulle's load factor calculations used in Options C and D are also erroneously high because he includes Lake Side's throughput in the numerator of the calculation but does not include Lake Side's demand in the denominator. That is, Dr. Abdulle adjusts the throughput component of the load factor calculation to include Lake Side but fails to make a corresponding adjustment to the peak component to include Lake Side's demand.[46] Thus, his calculations of system load factor inclusive of Lake Side load are wrong. However, even if corrected, Lake Side should not be included in the calculation of the load factor or the cost-of-service study in this case for the reasons I discussed above.

Large Diameter IHP Mains Allocation

Q. What does Mr. Collins recommend regarding the allocation of large diameter IHP mains?

A. Mr. Collins recommends allocating large diameter IHP mains based on Design-Day demand, arguing that distribution main investments are a function of Design-Day demand rather than throughput.[47]

[46] Phase II Direct Testimony of Abdinasir M. Abdulle, p. 10 (Table 4).
[47] Phase II Direct Testimony of Brian C. Collins, p. 8-23.

Q. Do you agree with Mr. Collins that Design-Day demand is a more appropriate allocation basis for large diameter IHP mains than throughput?

A. Yes. I agree that DEU designed its distribution system to meet the Design-Day demand of its firm customers. Consistent with my Phase II direct testimony, I continue to recommend using a 67.5% Distribution Design-Day / 32.5% Distribution Throughput allocation for large diameter IHP mains.[48] While I agree with Mr. Collins that the Peak and Average method allocates a disproportionate share of costs to high-load factor (firm) classes, and is inappropriate in many contexts, its volumetric component provides a means for allocating a share of large-diameter IHP main costs to interruptible customers, which is consistent with the longstanding practice in this jurisdiction. My recommendation allocates the majority of large-diameter IHP main costs based on the Distribution Design-Day while allocating a share of these costs to interruptible customers based on the Distribution Throughput component.

Magna LNG Facility Allocation

Q. What does Mr. Daniel recommend regarding the allocation of the Magna LNG facility?

A. Mr. Daniel argues that the TS classes should be allocated a share of the cost of the LNG facility because some firm sales customers have migrated to transportation service since the time that DEU sought Commission approval to build the LNG

[48] Phase II Direct Testimony of Kevin C. Higgins, pp. 11-12.

facility. He contends that the Commission's decision to approve the LNG facility was based on the LNG facility providing service to a larger customer base.[49]

Specifically, Mr. Daniel contends that since the 2017 test year used in the Company's general rate case application in Docket No. 16-057-03, the number of TS customers has doubled and TS volumes have increased by 16,557,322 Dth, or 40.2%. In his testimony, Mr. Daniel recommends including 25% of the increase in TS volumes in the allocation factor used for the LNG facility.[50]

Q. Is Mr. Daniel correct that TS volumes have increased 40.2% since 2017?

A. No. Mr. Daniel's claim is erroneous and is based on a faulty interpretation of the volumetric data. Mr. Daniel's calculation appears to compare the 2017 test year throughput for the TS class *in isolation* to the current test year throughput for the TS and TBF classes *combined*.

In the cost-of-service study in Docket No. 16-057-03 cited by Mr. Daniel, throughput was 41,159,777 Dth for the TS class and 5,850,772 Dth for the former FT-1 (now TBF) class, for total TS and FT-1 throughput of 47,010,549 Dth.[51] In the current case, throughput is 47,967,429 Dth for the TS classes and 9,749,670 Dth for the TBF class, for total TS and TBF throughput of 57,717,099 Dth.[52] This represents an increase of approximately 23% (10,706,550 Dth) for the combined TS and TBF (formerly FT-1) classes, or approximately 17% (6,807,652 Dth) for the TS classes alone. It is unclear how much of the growth in the TS and TBF

[49] Phase II Direct Testimony of James W. Daniel, lines 370-378.
[50] Phase II Direct Testimony of James W. Daniel, lines 379-389.
[51] Docket No. 16-057-03, QGC Exhibit 4.16 Utah Rate Case Model, COS Alloc Factors tab.
[52] DEU Exhibit 4.20 Summers Testimony - Electronic Model 5-2-2022, COS Alloc Factor TS TTL tab.

classes' volumes is a result of organic growth within the classes and how much is a result of migration from the firm sales classes.

Regarding the firm sales classes, since the 2017 test year, the number of GS and FS customers has grown from 992,450 customers to 1,155,087 customers, or 16%, and the GS and FS throughput has grown from 106,670,129 Dth to 114,627,747 Dth, or 7%.[53] In other words, total firm sales have grown, rather than contracted, over the period cited by Mr. Daniel.

Q. Putting aside the errors in Mr. Daniel's calculation, do you believe it is appropriate to allocate a share of LNG facility costs to the TS classes?

A. Absolutely not. Even if Mr. Daniel were correct about the magnitude of the migration from firm sales service to transportation service, the LNG facility was not designed to meet the needs of TS customers and will never be utilized for TS customers during a supply disruption or at any other time.

As Mr. Kelly B. Mendenhall explained in his direct testimony in Docket No. 19-057-13, transportation customers are responsible for their own supply reliability and cannot utilize the LNG facility. In the event of a supply issue, DEU could issue a Hold Burn to Scheduled Quantity restriction during which any transportation customer that uses more gas than it delivered to the system would be assessed a penalty which would be credited to sales customers.[54]

[53] Docket No. 16-057-03, QGC Exhibit 4.16 Utah Rate Case Model, COS Alloc Factors tab; DEU Exhibit 4.20 Summers Testimony - Electronic Model 5-2-2022, COS Alloc Factor TS TTL tab. This discussion excludes the NGV class since DEU does not allocate LNG costs to the NGV class.
[54] Docket No. 19-057-13, DEU Exhibit 1.0, lines 447-461.

Customer migration from firm sales service to transportation service is not a reasonable basis for allocating costs to TS customers for the LNG facility that TS customers will not use.

Q. How did Mr. Daniel implement his recommended adjustment to the LNG facility allocation in his cost-of-service model?

A. Despite his recommendation in testimony to base the TS allocation on 25% of the increase in TS volumes, Mr. Daniel's cost-of-service model actually includes 50% of his (erroneous) quantified increase in TS volumes in the allocation of LNG-related costs. Mr. Daniel spreads the TS volumes among the TS Small ("TSS"), Medium ("TSM"), and Large ("TSL") classes based on each class's proportion of total TS volumes.[55]

Q. Is Mr. Daniel's calculation of his LNG facility allocation factor logically consistent with the premise of his adjustment?

A. No, in addition to using 50% rather than 25% of the (erroneous) increase in TS volumes in his allocation, Mr. Daniel assigns most of this "growth" to the TSL class, although most firm sales customers that migrated to the TS class are smaller TS customers. Moreover, in his analysis of LNG cost allocation, Mr. Daniel failed to recognize that DEU understated the rate base of the LNG facility and thereby overstated non-LNG rate base, as discussed in my Phase II direct testimony.

[55] Based on Mr. Daniel's workpaper, 22-057-03 Daniel Workpaper 1 for OCS - DEU Exh. 4.20 ElctrncMdl 9-15-22, OCS Adjustments tab.

Q. What do you recommend regarding the allocation of LNG facility costs?

A. I agree with DEU that LNG facility costs should be allocated to sales customers only. In addition, I continue to recommend that the LNG-related and non-LNG-related rate base amounts be corrected from the amounts used in DEU's cost-of-service study, as explained in my Phase II direct testimony, in order to properly allocate these costs to sales customers.[56]

IV. COST-OF-SERVICE RESULTS SUMMARY AND REVENUE ALLOCATION CONSIDERATIONS

Q. Do you have any general comments of the overall impacts of the cost allocation recommendations of Dr. Abdulle and Mr. Daniel?

A. Yes. The overall effect of Dr. Abdulle's and Mr. Daniel's proposals is to shift an even greater share of the revenue requirement to TSL and TSM classes – classes which are already proposed to receive significant increases under DEU's proposal. While I focus my discussion on the TS classes, the IS class is also adversely impacted by their proposals to allocate peak-related costs to interruptible customers.

As I explained above, Dr. Abdulle's and Mr. Daniel's analyses contain numerous errors, and these impacts are also distorted by the error in DEU's depiction of current revenues for the TS and TBF classes, as I discussed in my Phase II direct testimony.[57] Despite these caveats, the cost-of-service results

[56] Phase II Direct Testimony of Kevin C. Higgins, pp. 14-17.
[57] Phase II Direct Testimony of Kevin C. Higgins, lines 92-111.

510 presented by Dr. Abdulle and Mr. Daniel demonstrate the general ramifications of
511 their proposals on cost allocation.

512 **Q. What is your response to the results of Dr. Abdulle's preferred Option B**
513 **cost-of-service study?**

514 A. Dr. Abdulle's Table 7 indicates that the TSL class would require a 117.7%
515 increase and the TSM class would require a 35.7% increase to achieve full cost of
516 service (including funding the TBF discount) under Option B at DEU's Direct
517 revenue requirement.[58] This compares to a 66.8% increase for TSL and a 22.6%
518 increase for TSM under DEU's Direct cost-of-service study and revenue
519 requirement.[59] Despite the dramatic increases for some classes that would result
520 from Dr. Abdulle's proposals, he argues that his Option B would not cause "a
521 significant shock to the allocations as they have been made in the past.[60]" I
522 disagree that imposing a 117.7% increase on the TSL class would not represent a
523 significant shock.

524 **Q. What is your response to the results of Mr. Daniel's cost-of-service study?**

525 A. Mr. Daniel's testimony presents the results of his cost-of-service study at the
526 OCS's Direct revenue requirement, which makes it difficult to compare to DEU's
527 results. Mr. Daniel's Table 1 indicates that the TSL class would require a 116.6%
528 increase and the TSM class would require a 31.7% increase to achieve full cost of

[58] Phase II Direct Testimony of Abdinasir M. Abdulle, p. 12 (Table 7).
[59] Based on DEU Exhibit 4.20 Summers Testimony - Electronic Model 5-2-2022, COS Sum TS Split tab. To be comparable to Dr. Abdulle's impacts, these increases do not include the correction to TS and TBF current revenue I explained in my Phase II Direct Testimony. *See* my Phase II Direct exhibit, UAE Exhibit COS 2.2, page 1, Table 2, for DEU's proposed increases including the current revenue correction.
[60] Phase II Direct Testimony of Abdinasir M. Abdulle, lines 247-248.

service under the OCS's cost-of-service study and Direct revenue requirement (not including funding the TBF discount).[61] This compares to a 63.4% increase for TSL and a 20.6% increase for TSM under DEU's Direct cost-of-service study and revenue requirement, not including the TBF discount.[62] Thus, even at a revenue requirement increase that is less than half of DEU's Direct proposal, the OCS's cost allocation recommendations produce significantly higher increases for certain classes.

Q. Does Mr. Daniel recommend applying gradualism to the revenue allocation in this case?

A. Yes. Mr. Daniel recommends capping the class percentage increases at the second-highest cost-based increase under his cost allocation and the OCS's Direct revenue requirement, which he states is 46.13%. Mr. Daniel's recommendation would cap the TSL increase at 46.13% and recover the shortfall from the TSS and TSM classes.[63]

Q. Do you believe that the Commission should consider applying rate mitigation in this case?

A. Yes, the Commission should consider implementing a rate mitigation plan that would temper the dramatic impacts that would otherwise be experienced by certain classes. The need for rate mitigation would be even more critical if any of the cost allocation proposals of Dr. Abdulle or Mr. Daniel that I have discussed

[61] Phase II Direct Testimony of James W. Daniel (OCS 4D [revised] Daniel), p. 27 (Table 1).
[62] Based on DEU Exhibit 4.20 Summers Testimony - Electronic Model 5-2-2022, COS Sum TS Split tab.
[63] Phase II Direct Testimony of James W. Daniel (OCS 4D [revised] Daniel), lines 580-605.

are adopted. Given the magnitude of the impacts of Dr. Abdulle's and Mr. Daniel's cost allocation proposals on the TSM and TSL classes, it may be necessary to spread a portion of the shortfall to the GS class rather than confining the rate mitigation impact to the TS classes.

Q. Have you prepared an updated summary of the class cost-of-service results using your recommended allocation methods at the revenue requirement you recommended in your Phase I rebuttal testimony?

A. Yes, these results are summarized in Table KCH-1-R. The cost allocation methods I utilized are consistent with those recommended in my Phase II direct testimony but the results have been updated to reflect the overall revenue requirement I recommended in my Phase I rebuttal testimony, which is an increase of $41,775,445.[64] I recommend that these results be used to guide the revenue allocation to classes at the overall revenue requirement that the Commission approves in this case, prior to taking rate mitigation into account as discussed in my Phase II direct testimony.

[64] This increase includes an illustrative ROE adjustment based on the national median ROE.

Table KCH-1-R
Cost-of-Service Results with UAE COS Recommendations
At UAE Phase I Rebuttal Revenue Requirement

Class (a)	Current DNG Revenue [65] (b)	DNG Revenue Change to Achieve Equalized ROR: $ Increase/ (Decrease) (c)	DNG Revenue Change to Achieve Equalized ROR: % Increase/ -Decrease (d)	DNG Revenue Change Plus TBF Discount: $ Increase/ (Decrease) (e)	DNG Revenue Change Plus TBF Discount: % Increase/ -Decrease (f)
GS	$383,506,941	$33,212,620	8.66%	$36,481,594	9.51%
FS	$2,822,045	$813,448	28.82%	$863,904	30.61%
IS	$264,568	($74,446)	-28.14%	($72,257)	-27.31%
TSS	$14,170,736	($2,637,594)	-18.61%	($2,452,464)	-17.31%
TSM	$12,873,715	$1,713,323	13.31%	$1,968,646	15.29%
TSL	$10,685,465	$4,745,263	44.41%	$5,068,724	47.44%
TBF	$6,473,467	$3,601,118	55.63%	($488,690)	-7.55%
NGV	$2,605,568	$401,713	15.42%	$405,989	15.58%
Total	$433,402,504	$41,775,445	9.64%	$41,775,445	9.64%

Q. Does this conclude your Phase II rebuttal testimony?

A. Yes, it does.

[65] Reflects a correction to TS and TBF classes' current revenue as discussed in my Phase II direct testimony, lines 92-111.