Before the Public Service Commission of Utah

Docket No. 17-057-20

IN THE MATTER OF THE PASS-THROUGH APPLICATION OF DOMINION ENERGY UTAH FOR AN ADJUSTMENT IN RATES AND CHARGES FOR NATURAL GAS SERVICE IN UTAH

Prepared Direct Testimony of

Howard E. Lubow

DPU Exhibit 5.0

On Behalf of the

Utah Division of Public Utilities

PUBLIC VERSION

April 23, 2018

Introduction and Background

Q. Please state your name and business address.

A. My name is Howard E. Lubow. My business address is Overland Consulting. My business address is 11551 Ash Street, Suite 215, Leawood, Kansas 66211.

Q. Please state your current position with Overland Consulting and summarize your professional experience relevant to your testimony in these proceedings.

A. I am President of Overland Consulting. I have testified in numerous proceedings across the country on gas distribution utility issues including gas curtailment, gas supply procurement, class cost of service, and tariff structures. I have also addressed natural gas pipeline matters, both on behalf of pipelines and shippers. I have addressed these matters on behalf of utilities and state commission before state and federal regulatory agencies in the United States and Canada. A more complete representation of my utility and consulting experience is included in my resume attached to the testimony as DPU Exhibit 5.1 DIR.

Q. Would you please briefly summarize your experience as it relates to gas pipeline and distribution company operations and procurement practices?

A. I was the Chief Operating Officer of a gas pipeline company in the Midwest. In this capacity, among others, the Senior Vice-President, Engineering and Operations reported directly to me. Aside from my position as COO, I also held the position of Chief Financial Officer. Within the Overland Consulting practice, we perform management audits of gas distribution companies, assessing various aspects of governance, finance, and operations. More specifically, the audit reviews encompass gas operations and supply practices. These engagements are focused on management effectiveness, policies and procedures, and the assessment of utility operations in light of industry best practices. I have recently been the Project Director in major management audit reviews of New York State Gas & Electric Company, Rochester Gas & Electric Company, and Central

Hudson Gas & Electric Company. Included in the scope of these projects was: gas planning, forecasting and procurement practices.

Q. Did you submit testimony and appear as a witness in Docket No. 17-057-09, addressing matters similar in scope to these proceeding?

A. Yes, I did

Q. What is the scope of your testimony in this proceeding?

A. Overland was retained by the Division of Public Utilities ("DPU") to review the Dominion Energy Utah ("DEU" or "the Company") filing in this proceeding and to specifically address:

- The reliability of the forecast models employed by DEU;
- Planning and Operating requirements on the DEU system during peak conditions;
- Current and Alternative options available to meet DEU peak demand; and
- Industry planning and best practices associated with these subject areas.

Three individuals were involved in the review of these subject areas. Mr. Ken Ditzel, who reviewed the forecast models employed in the peak-day and peak-hour forecasts; Mr. Frank DiPalma, who reviewed the planning and operations requirements on the DEU system; and myself. I reviewed the historic experience of the Company in meeting customer needs during peak conditions; alternatives available to meet these customer demands; and industry planning and practices regarding planning and operations practices employed in meeting gas distribution company demands during peak periods.

Q. Are you aware of the specific circumstances by which this proceeding was opened?

A. I believe so. Aside from this Docket providing a further, and more detailed review of the issues raised in Docket No. 17-057-09, it is my understanding that the costs associated with the DEU Peak-Hour services contracts with Kern River and DEQP are now being collected on an interim basis, at least in part, subject to the outcome of this proceeding.

Q. What material did you rely upon as the basis for your review and analysis?

A. I reviewed the direct testimony filed by the DEU Company witnesses: Mr. David C. Landward; Mr. Michael L. Platt; and Mr. William F. Schwarzenbach III. I also reviewed material supporting this testimony and documents relevant to this proceeding produced by the Company in responses to discovery. Aside from these sources, I have relied on publicly available information. Finally, I have relied upon my knowledge of the natural gas business, gained from my consulting and pipeline operations experience.

Q. Having read the testimony filed by DEU in this proceeding, can you characterize it in relation to the evidence it filed in support of the Peak-Hour Kern River and Questar Pipeline Contracts addressed in Docket No. 17-057-09?

A. Yes. The actions taken by DEU to meet its Peak-Hour needs, and the evidence and arguments supporting these actions are essentially unchanged from the material provided in the hearing last year. However, the scope of review of this evidence by the DPU, principally through its consultants, has expanded in this proceeding.

Q. Were all documents produced by DEU in discovery, as requested by Overland?

A. Certain documents were not produced in time to be considered in our Direct Testimony. To the extent that it may be necessary to do so, we will supplement our testimony as information becomes available.

Summary of Findings

The following findings and conclusions are addressed in this testimony.

- The actual conditions of service to DEU from Kern River and DEQP have been relatively unchanged in recent years, with no interruptions of service, operational or financial impacts to DEU due to pipeline restrictions imposed during peak periods.

- There are no known comparable examples of upstream pipeline peak-hour services elsewhere in the country; and more specifically on the Kern River and DEQP pipelines, aside from the service to DEU.
- DEU is currently paying approximately $2.4 million per year to upstream pipelines, about 60% of which is paid to its affiliate, DEQP. To date, there have been no circumstances or conditions where these services were needed to meet peak period conditions that could not otherwise have been met under existing firm transportation service agreements.
- DEU has not experienced a Design Peak-Day condition since 1963; about 55 years ago. DEU has estimated that the probability of a design peak occurrence in a 50 year period is 92%.
- DEU's planning documents support a commitment to **[Begin Confidential]** [redacted] **[End Confidential]**
- DEU has made little, if any, effort to consider load control options for large customers or Lake Side, though such options, if and when actually needed, could be a significantly more economical alternative.
- DEU fails to follow industry practices in a number of ways relevant peak-period planning, and as a result, comes to spurious and unnecessary planning conditions it believes must be met.

Historical Experience in Meeting Design Peak-Day Demand

Q. Mr. Schwarzenbach has cited a Kern River presentation made at a customer meeting on September 14, 2017 in his testimony. This testimony references actions that "Kern River could take to address hourly imbalances and with excerpts from the Kern River Tariff that authorize Kern River to take those actions". Mr. Schwarzenbach specifically quotes several of provisions in the Tariff, including Section 10.9, which states:[1]

> **Transporter will have the right to take actions of whatever nature may be required (including termination or reduction of service to Shipper) to correct any imbalances which impair the operation of or threaten the integrity of its system, including maintenance of service to other Shippers. (Kern River Tariff, Section 10.9)**

Mr. Lubow, was this provision in the Kern River Tariff recently issued?

A. No. It was issued on August 19, 2010.[2] Thus, these provisions are not something new, and do not support any recent change in meeting services to shippers during a peak-day condition. In fact, the Kern River presentation made In September 2017 references that it will "continue to provide a reasonable amount of flexibility but will not allow system integrity to be impacted".[3]

[1] Direct Testimony of William F. Schwarzenbach III at page 4, lines 64-76.
[2] Response to Discovery DPU 2.08; Kern River website.
[3] Response to Discovery DPU 2.07, Attachment 1. Presentation of Bob Checketts, VP, Operations & Engineering Kern River Gas Transmission Company.

Q. Again, referring to Mr. Schwarzenbach's testimony at page 4, lines 77-82, he goes on to reference the Kern River September 14, 2017 presentation where it cites that "Kern River has the "right to take actions of whatever nature may be required (including interruption or suspension of service to the Location) to correct any Operational Imbalances that may impair the operation of, threaten the integrity of, or interfere with the maintenance of service on" Kern River's system." Did you request a listing of each and every interruption or suspension of service from Kern River occurring during a peak period condition from January 1, 2012 to the present?

A. Yes, I did. There have been none.[4]

Q. At page 9, lines 179-183, Mr. Schwarzenbach points out that "upstream pipelines have sent out many notices directing shippers to match their deliveries to scheduled volumes. These notices have come frequently in the last year-and-a-half during both summer and winter high flow events." To what extent, if any, did DEU incur any operational or financial impacts for taking deliveries from Kern River at or below the firm capacity it holds on the pipeline.

A. In its response to discovery, DEU did not identify any operational impacts and stated that no financial impacts have been incurred for taking deliveries from Kern River at or below the firm capacity it holds on the pipeline.[5]

Precedents for Consideration of Peak-Hour Services

Q. Has the Company provided any examples of how the industry has begun to focus on services required to address Peak-Hour demand requirements?

A. Yes. Mr. Schwarzenbach provides some discussion of two proceedings in which this matter was addressed. This is essentially the same testimony that he provided in his Rebuttal in Docket No. 17-057-09. Mr. Schwarzenbach stated that the matters raised in

[4] Response to Discovery DPU 2.09.
[5] Response to Discovery DPU 2.12.

FERC Order 809 "Coordination of the Scheduling Processes of Interstate Natural Gas Pipelines and Public Utilities" were of interest to the Company.[6] However, neither Questar Gas Company, nor its affiliates, were parties to FERC Docket No. RM14-2-000, which resulted in the issuance of Order 809.[7]

Q. Given that Mr. Schwarzenbach has again raised FERC Order 809 as an example of peak-hour planning, would you please comment on your understanding of this Order and its relevance in this case?

A. Yes. FERC Order 809 addresses scheduling practices for wholesale natural gas and electric generation. It is my understanding that this proceeding evolved primarily to address coordination issues in the ISO-NE and PJM market areas. This Order does not address, nor does it mention, peak-hour planning for natural gas pipelines or natural gas LDC. There is no reference to "hourly needs" of customers. The reference in Mr. Schwarzenbach's testimony at page 3, lines 49 to 50 regarding the NAESB proceedings addressing system reliability, again, is rooted in the coordination of scheduling natural gas and electric generators.[8]

Q. Given that the Lake Side generation facility imposes a substantial firm load on the DEU system, is it possible that there may, in fact, be some relevance to the Peak-Hour concerns raised by the Company in this case?

A. While this may seem like a reasonable possibility, based on the data provided by DEU the Lake Side Peak-Hour does not coincide with the DEU system Peak-Hour, and therefore, does not impact the Company's Peak-Hour need, aside from its contribution to the firm demand at the time of the system peak-hour.[9]

[6] Direct Testimony of William F. Schwarzenbach III at pages 2-3, lines 28-50.
[7] Response to Discovery DPU 2.05.
[8] Response to Discovery DPU 2.06.
[9] Responses to Discovery DPU 1.26, and DPU 4.10 (Confidential).

Q. Exactly how and when did this issue of peak-hour needs develop within DEU, if you know?

A. Regarding the focus on a peak-hour, the engineering group determined that the unsteady-state models assumed even customer usage throughout the day, which they concluded was incorrect. It was determined that this needed to be addressed in the 2011 or early 2012 timeframe.[10] Mr. DiPalma addresses DEU system planning, and explains the relationship of design-day forecasts to these planning models.

Q. As you may know, DEU is currently taking peak-hour services from both Kern River and DEQP. Do you know what cost is currently being incurred for these services?

A. At the time of his rebuttal testimony in Docket No. 17-057-09, Mr. Schwarzenbach indicated that the Kern River Service was $864,569. Depending on the final pricing for the DEQP service, which was pending at that time, the price ranged from $1,606,332 to $1,836,380.[11] The total costs currently being paid for these services are as follows:[12]

Kern River	$ 874,000
DEQP	$1,487,815

History of Peak-Period Conditions

Q. Have you reviewed the historic customer demands experienced over the last twenty-one years, and the capacity available to meet those demands during these periods?

A. Yes. DPU Exhibit 5.2 DIR shows DEU's actual firm sales over the 20 heating seasons through 2017. The design day peak is also shown, as well as comparisons in the difference in actual sales to design requirements, as defined by DEU. Over this period, the actual firm sales demand has been at least 16.79% below the design day requirement and has averaged approximately 29% below design peak demand levels.

[10] Response to Discovery DPU 2.33.
[11] Docket No. 17-057-09; Rebuttal Testimony of William F. Schwarzenbach at page 9, lines 217-220.
[12] Docket No. 17-057-20; Exhibit 1.3, Page 1 of 2.

Assuming a peak-hour variance of 17% as represented in DEU's peak-hour analysis, aside from being able to meet this demand with other alternatives, there would never have been an instance when peak-hour services from upstream pipelines would have been needed.

Q. Was other information provided by DEU that provides additional insight into the Company's actual historical peak sendout compared to its projected peak-day?

A. Yes. DPU Exhibit 5.3 DIR provides a summary of actual and projected sendout over the last ten years, including actual and projected HDDs over this time-period. The 2017/2018 heating season actual experience was approximately 40% below the projected Peak-Day demand.

Q. What would the cost of the pipeline peak-hour services have been if you assumed that they were in place during the historic 21 year period ending in the 2017/2018 heating season?

A. Assuming current period peak-hour capacity and prices, the cost to customers would have been approximately $50 million.[13]

Q. Based on the actual peak-day and peak-hour customer demands over this 21 year period, would the additional peak-period capacity ever have been necessary to meet the peak-day conditions experienced during this period?

A. It would not.

Q. Would your answer be the same if you considered peak-period customer needs over the last 50 years?

A. That is correct.

[13] Stated in nominal dollars.

Q. Mr. Lubow, while your review of the DEU historical experience may be informative, wouldn't you agree that this does not preclude the possibility of more extreme conditions occurring in a Peak Design Day?

A. That is certainly possible. The DEU design day temperature of minus 5 degrees has occurred seven times. Six of these times were between 1932 and 1949; the seventh occurred on January 12, 1963.[14] Mr. Landward has indicated that the probability of a Design-Peak-Day event occurring at least once in a ten-year period is 40%.[15] In a response to discovery, Mr. Landward stated that using the same methodology to establish the probability of this outcome, the probability of occurrence over a twenty-year period is 64%, while the probability of occurrence over a fifty-year period is 92%.[16] Based on this testimony, none of the actual peak days occurring over the last fifty years resulted in the expected outcomes for which Mr. Landward estimated the likelihood of such occurrences ranging from 40% up to 92%.

In developing its Design Peak Day and Design Peak Hour estimates, it appears that DEU relies on historical data extending back to the 1929 to 1930 timeframe for HDD; thus, representing about 90 years of historical temperature data.[17] However, many utilities currently rely on only more recent data; typically, 20-30 years. This reliance on more recent data is driven by long-term trends in the data supporting warmer weather conditions.

Based on this historical analysis; the apparent flaws in the DEU forecast methodology as addressed by Mr. Ditzel; and practices normally followed within the industry, I am very skeptical about any reasonable likelihood of the DEU portrayal of Peak-Period conditions where DEU is unable to meet firm load demand in the foreseeable future.

[14] Response to Discovery DPU 2.46.
[15] Direct Testimony of David C. Landward at page 14, line 260 to page 15, line 270.
[16] Response to Discovery DPU 2.50.
[17] Direct Testimony of David C. Landward at page 14, lines to 254. See also Response to Discovery DPU 2.46.

Q. You previously mentioned the current costs of the Peak-Hour services currently contracted by DEU. Is this representative of the cost burden on customers going forward?

A. No. The $2.4 million in costs currently being paid for peaking services on the upstream pipelines is only an interim step, based on DEU's stated plans to move forward with the construction of an LNG plant. Updated cost data is expected to be filed by DEU in a separate filing within the next two weeks. However, preliminary estimates of the LNG plant developed last fall indicated annual costs in excess of **[Begin Confidential]** [redacted] **[End Confidential]**.

Q. In Mr. Platt's Direct Testimony at page 5, lines 97 to 112, he describes the consequences of a lack of supply during a Peak Hour demand condition, as estimated by DEU. He concludes that approximately 800,000 customers or about 80% of the Company's system could lose service in the absence of adequate supply during this Design Peak Hour period. Mr. Lubow, regardless of whether DEU has arranged for these "Peak Hour" services in the past or not, are you aware of past occasions where firm sales customers have lost service due to a lack of upstream pipeline capacity?

A. DEU has yet to experience an event that resulted in losing any firm sales customers on its system.[18]

Q. At page 6, lines 123-124, Mr. Schwarzenbach states that "(t)he DEQP Tariff requires customers to flow on a ratable basis. DEQP does not have an obligation to permit hourly fluctuations…" Based on the DEU response to Discovery Request 3.13, is this an accurate statement?

A. The DEU response to this request is attached as DPU Exhibit 5.3 DIR. Based on this response, it is more accurate to say that "A Shipper shall use reasonable efforts to deliver and receive gas at uniform hourly and daily flow rates, except as otherwise

[18] Response to Discovery DPU 2.71.

provided under an FP Addendum". Based on this response, "reasonable efforts" is not a requirement to flow on a ratable basis. In fact, in the DEU response to Discovery Request 3.14, there is a specific reference to an allowance for an excess volume of gas over the uniform flow rate, provided that the total delivery for the Gas Day does not exceed the scheduled quantity.

Q. At page 9, lines 171-173, Mr. Schwarzenbach states that "(i)f a pipeline reaches capacity and cannot provide flow above the RDC during Peak Hours, customers, including Dominion Energy, would be asked to match flows to ratable scheduled nominations." Are you aware of how many times, in the past five years, DEQP has asked DEU to match flows to ratable scheduled nominations?

A. Yes. There were none.[19]

Q. Since Kern River initiated its offer of peak-hour services effective on September 17, 2016, have any shippers, aside from DEU, requested service under this tariff?

A. No. In Docket No. 17-057-09, DPU asked this same question. It its response to DPU 1.10, DEU stated that: "(t)he Company is not aware of any other customer signing up for this service. No one other than Dominion Energy has signed up for this service. It is a new service." This response was dated May 24, 2017.

A similar question was posed to DEU in this Docket. Another eleven months have now passed, and the Company has confirmed, again, that it is unaware of any other customers requesting the Kern River peak-hour service now offered. Further, it is similarly unaware of any requests from other shippers for peak-hour services now offered by DEPQ.[20]

[19] Response to Discovery DPU 5.10.
[20] Response to Discovery DPU 2.13.

Q. At page 12, lines 246-257, Mr. Schwarzenbach stated that it is his belief that it would not be responsible to ignore pipeline warnings "…that they will not reserve additional capacity above the required daily contract (RDC) amounts…" Of course, these "warnings" would necessarily have been made to all shippers on the Kern River pipeline, not just DEU. Is there any evidence that other shippers have taken any actions in response to the availability of capacity above RDC at this time?

A. No. DEU has indicated that it is not aware of any specific actions taken by other shippers.[21]

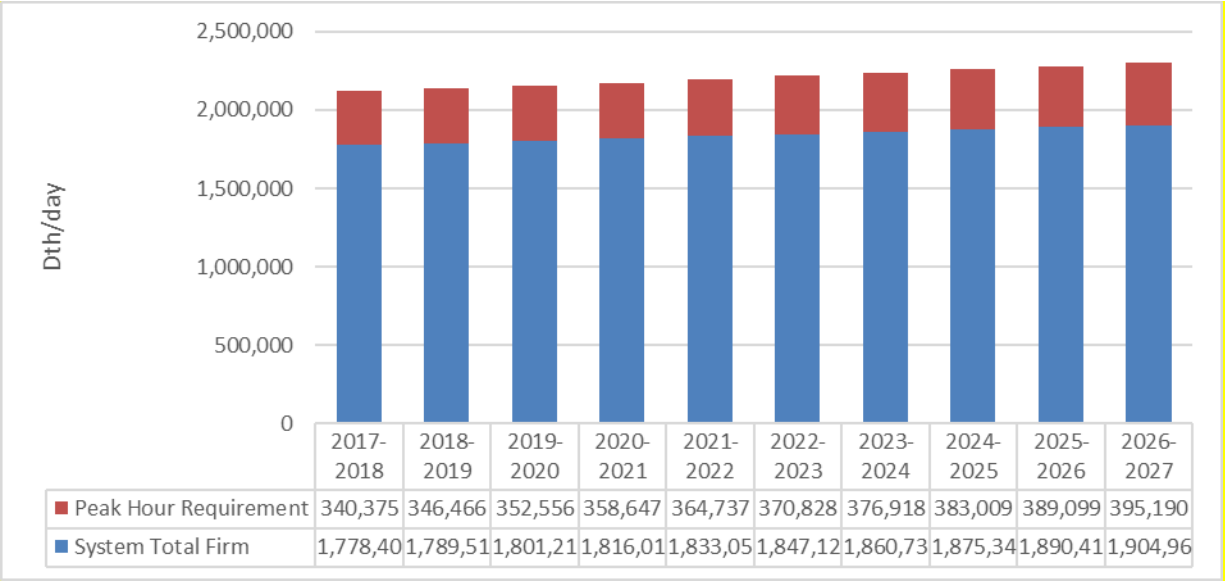
Growth in Demand

Q. Is the system peak-period demand expected to increase based upon the current DEU forecast?

A. Yes. The average annual anticipated growth in peak hour and peak day demand is 1.8 % and 0.8 %, respectively.[22] However, this growth in demand is apparently not being driven by any increase in usage per customer as shown on DPU Exhibit 5.4.

[21] Response to Discovery DPU 2.18.
[22] Response to Discovery DPU 2.31. Calculated.

Table 1-DEU Load Forecast



	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027
Peak Hour Requirement	340,375	346,466	352,556	358,647	364,737	370,828	376,918	383,009	389,099	395,190
System Total Firm	1,778,40	1,789,51	1,801,21	1,816,01	1,833,05	1,847,12	1,860,73	1,875,34	1,890,41	1,904,96

Q. Is there any evidence that DEU is focused on reducing growth on its system?

A. No. Actually, the evidence available demonstrates quite the opposite. The strategic planning materials provided include the following:

[Begin Confidential]

[redacted]

[End Confidential]

Q. Mr. Lubow, are you aware of any formal policy statements by this Commission or policy makers in the State regarding its interest in funding commitments necessary to foster gas expansion at this time?

A. I have been informed that Utah recently passed legislation to bring natural gas to rural communities.

Q. Is it customary for gas distribution utilities to pursue gas expansion programs in the absence of support from state policy makers and regulators?

A. It would be highly unusual for gas distribution utilities to pursue customer expansion in the absence of such support. By its nature, gas expansion is less economical, and absent cost subsidies or cross-subsidies, often results in higher costs for existing customers. For this reason, many states do not support gas expansion in the absence of a showing of a net-benefit test. Therefore, I must assume that any pursuit of gas expansion in Utah will occur within parameters defined by this Commission.

Available Options to Meeting Peak-Period Demand

Q. At page 11 of Mr. Schwarzenbach's testimony, he references that fact that DEU has considered various options to meeting its peak-hour requirements, one of which includes on-system storage. Have you reviewed the analysis of these options, as contained in Exhibits 3.7 and 3.8?

A. Yes. The extent of the DEU cost-benefit or SWOT analysis regarding capacity requirements options seems to be contained in DEU Exhibit 3.8.[23] The analysis considers eight options for added peaking capacity as follows:

1. No advanced action.
2. Demand response.
3. Additional firm upstream transportation capacity and supply purchases.

[23] Response to Discovery DPU 2.16.

4. Excess firm upstream transportation capacity and additional off-system storage.
5. Backhaul on interruptible upstream transportation capacity and supply purchases.
6. Upstream hourly Firm Peaking Services.
7. On-system storage.
8. Magnum Energy Storage.

Q. Did DEU provide a summary of an option for on-system storage offered proposed by Magnum Energy?

A. Yes. However, the summary is based upon a March 31, 2016 proposal, and does not reflect the more recent proposal made by Magnum dated February 22, 2018. In its more recent presentation, Magnum represents a number of benefits that specifically address and resolve the DEU alleged need for 340,000 Dth / day of peak hour service on a firm basis. Among these various benefits, Magnum indicates that its proposed on-system storage option **[Begin Confidential]** [redacted] **[End Confidential]**[24]

Q. Did DEU provide an estimate of the annual costs for the Magnum Energy and LNG options in its analysis?

A. It did. The LNG annual revenue requirement was estimated at about **[Begin Confidential]** [redacted] **[End Confidential]**, while the Magnum Energy storage option was estimated at **[Begin Confidential]** [redacted] **[End Confidential]** per year.

[24] Response to Discovery DPU 2.17, Attachment 1. (Confidential)

Q. Have you found any particular bias in the DEU consideration of its various options?

A. In looking at the planning documents that were produced in discovery, I believe that there is a bias. The excerpts from the strategic planning documents are quite limited and heavily redacted. However, it is clear that the Dominion Gas Distribution business, as reflected specifically in DEU objectives, is focused on **[Begin Confidentia**l] [redacted][25] **[End Confidential]**

Q. Please turn to DEU Exhibit No. 3.8, pages 3 and 4 of 14. At this portion of the Exhibit sponsorship by Mr. Schwarzenbach, the Company addresses the potential cost and benefits of controlling large firm customer load at peak periods. Based on interrupting service to these 275 customers, the Company estimates that it could reduce peak demand by approximately 150,000 Dth/day, which would cost approximately $27.5 million for the necessary equipment. Do you agree with the way this analysis is framed?

A. No. Based on the Company testimony in Docket No. 17-057-09,[27] it is probably not operationally realistic, necessary or appropriate to consider controlling the loads of 275 large firm customers. Excluding the Lake Side delivery, the largest 13 customers have a peak demand of 193,470 Dth.[28] Assuming a cost of equipment $100,000 per customer, as represented in DEU Exhibit No. 3.8, the total cost would be $1.3 million, not the $27.5 million claimed by DEU. Of course, this is a one-time capital cost, as distinguished from the annual costs incurred for peak-hour services obtained from upstream pipelines.

[25] Response to Discovery DPU 2. 28. (Confidential)
[26] Response to Discovery DPU 2.29. (Confidential)
[27] Rebuttal Testimony of Kelly B. Mendenhall at page 8, line 180 to page 9, line 192.
[28] Response to Discovery DPU 2.20, Attachment.

Q. Referring to Mr. Schwarzenbach's testimony at page 13, lines 274-279, he identifies potential difficulties with managing load control for a large group of large customers. Do you know if this statement was based on any formal analysis of how load control could be implemented, and the benefits and concerns associated with various options?

A. It is not apparent that any serious analysis of this demand response opportunity has been made at all. According to DEU's data responses, there are no documents supporting the statements referred to in your question. The statements are made on the basis of informal and undocumented conversations with "…representatives from Operation Engineering and Gas Control".[29]

Q. A significant firm transportation delivery is associated with the Lake Side facility. In light of the DEU concerns regarding peak-hour issues, do you know if there is any history of the Company maintaining an hourly limit on these deliveries during peak-period conditions?

A. There has been no set flow control to maintain an even hourly flow rate to the Lake Side facility.[30]

Q. Aside from the load control option, is there any evidence that the Company has pursued, or intends to pursue, demand response opportunities more generally.

A. Apparently, they have not.[31] DEU currently has a number of "ThemWise" energy efficiency programs that have had some impact on consumption. "The Company has not historically, nor does it currently, estimate system capacity reductions resulting from its energy efficiency programs."[32] This current lack of estimation of the impact of demand response on capacity or peak demand is concerning in light of the projected

[29] Response to Discovery DPU 2.21.
[30] Response to Discovery DPU 4.11.
[31] Response to Discovery DPU 2.24.
[32] Response to Discovery DPU 2.25.

growth rate in peak-day and peak-hour demand. In any event, there is no indication that any additional efforts are now under consideration.[33]

Q. Do you believe that there are any other viable options that have not been considered in some fashion by DEU?

A. I do. The Lake Side Generating facility currently has 210,000 Dth of firm load, provided through the DEU system. It is my understanding that it also takes delivery of gas directly from Kern River.[34] As pointed out in DEU and DPU witness testimony sponsored by Mr. Doug Wheelwright, The Lake Side peak usage does not occur coincident with the DEU design peak-hour demand. Mr. Wheelwright points out that DEU recognizes the contract demand for Lake Side in developing its forecasted Peak-Hour requirements, though actual Lake Side usage at the DEU Peak-Hour is less. Aside from this important consideration, I believe that there is another potential viable option not addressed by DEU. The Lake Side facility is considered to be a fast start combined cycle design; "Both Lake Side 1 and Lake Side 2 have been designed so start times are reduced compared to conventional designs; this offers considerable flexibility to match real-time requirements of our customers."[35] Fast start CC's can get to 100% in ~30 minutes.[36] Based upon the operating characteristics of the Lake Side facility; the fact that it does not take or need its contracted capacity at the time of the DEU forecasted peak-hour; and that it may take delivery of gas directly from Kern River, it seems reasonable that Lake Side would be open to a formal commitment to curtail its demand if and when DEU were to experience a peak-period condition that could not otherwise be met.

[33] Response to Discovery DPU 2.79.
[34] Response to Discovery DPU 1.28.
[35] https://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/EnergyGeneration_FactSheets/RMP_GFS_Lake_Side.pdf
[36] https://www.power-eng.com/articles/print/volume-121/issue-3/features/fast-start-combined-cycles-how-fast-is-fast.html

Q. Does the DEU analysis of various options to meeting its peak-hour requirements include any efforts or estimates of incentives likely needed to induce Lake Side or other large firm customers to curtail their load during peak-period conditions?

A. No.

Industry Procedures and Best Practices

Q. DEU Exhibit 3.9 portrays a peak-day, indicating the hourly demands, and associating such demands with the use of storage. What do other LDCs do to meet this fluctuation in demand where on-system storage is not necessarily available?

A. Under these conditions, in my experience, LDCs generally rely upon upstream pipelines to continue to provide service, whether they are contractually obligated to do so or not. DEU has also recognized that this practice is common within the industry.[37]

Q. Has DEU provided any industry data of relevance to this proceeding?

A. It did. In a response to discovery, DEU provided a copy of an AGA survey entitled, "Gas System Planning – Peak Day Design Criteria". The summary is dated July 2017, and is based upon the responses of 39 gas utilities.[38]

Q. Would you please summarize the information contained in the AGA summary?

A. Yes. It solicited information regarding how the gas companies, among other things, considered: Peak Day Design Criteria; operating pressures under peak-period conditions; confidence levels assumed in forecasting firm demand; how the Peak Day demand is considered throughout the day; and whether a Peak Day has ever exceeded Design Criteria, and if so, whether firm customers were interrupted.

[37] Response to Discovery DPU 5.15.
[38] Response to Discovery DPU 2.88, Attachment 1 (Confidential)

Q. Given the issues that have been raised in this proceeding, what information did you find to be noteworthy?

A. I found the following results to be relevant and have some bearing on the matters addressed in this proceeding.

[Begin Confidential]

[redacted]

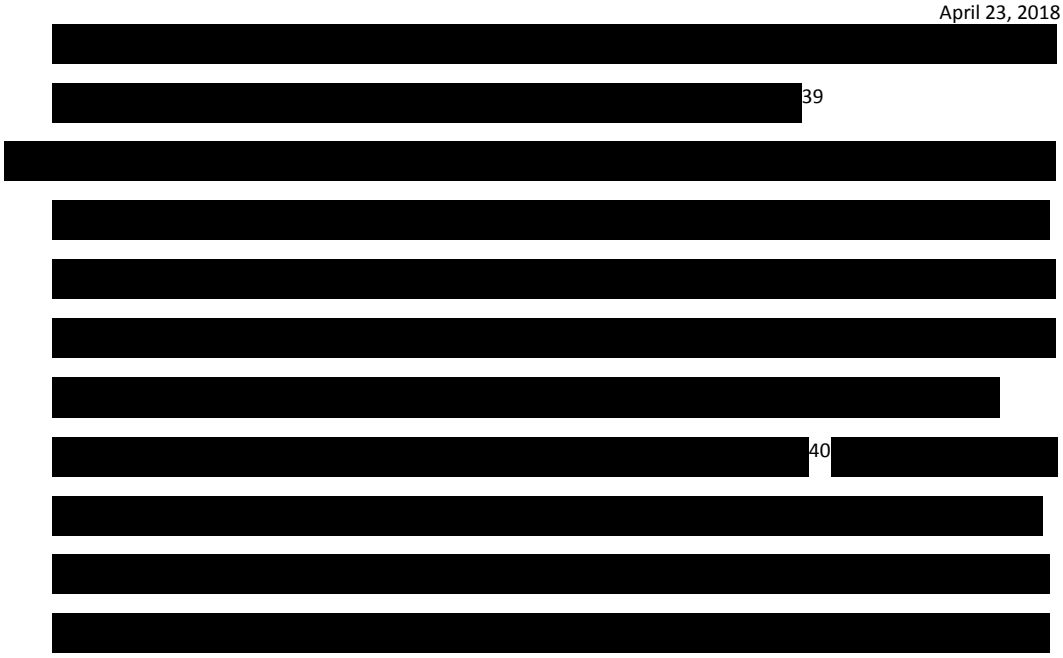
[End Confidential]

Q. Can you explain how these survey results relate more directly to the DEU evidence in this case?

A. Certainly. Taking the above results in order, and relating it directly to DEU, the following observations can be made.

[Begin Confidential]

[redacted]



[End Confidential]

Q. You mentioned that DEU measures a number of variables aside from HDDs. Is it possible to see what the effect of these variables might be, when isolated from HDDs?

A. Yes. Mr. Landward provides the effect of each of the variables he considers in his testimony at Page 8, line 156. If we assume that the Peak Design Day is 1,048,291 Dth based on HDDs, the DEU adjustment for wind adds 283,464 Dth, or 27% to the estimate. To put this into perspective, two observations can be made. Half the utilities in the AGA survey would not make this adjustment at all in estimating their Peak Design Day. If we conclude that the wind adjustment is inappropriate or improperly determined, this adjustment exceeds, and therefore offsets, the hourly variation in load of up the 17% as contained in the DEU analysis presented in its testimony.

[39] Direct Testimony of David C. Landward at page 2, lines 33-35.
[40] DEU assumes that the recurrence interval is 20 years. Direct Testimony of David C. Landward at page 3, line 66.

Q. I know that Mr. Ditzel addresses the use peak-day inputs DEU considers in the forecast models, but can you comment on how the DEU variables considered compare to other utilities in the AGA study?

A. Yes. As I previously stated, about **[Begin Confidential]** [redacted] **[End Confidential]** only rely on temperature (HDDs). For those that consider other factors, none appear to consider the input variables in the manner utilized by DEU. Aside from the AGA study, it further appears that DEU uses among the most restrictive assumptions for peak-day estimates among its affiliates.[41]

Summary Conclusions

Q. In Docket No. 17-057-09, you concluded that the DEU Peaking contracts with Kern River and DEQP, in your opinion, unnecessary at this time. Based upon your analysis in this proceeding, and the analysis of other witnesses appearing on behalf of the DPU, have you come to any different conclusion?

A. No. The DEU testimony in this case has changed little from its evidence in the 17-057-09 case. However, the Staff analysis in this proceeding is benefited by a detailed review of the forecast models relied upon by DEU in developing its peak-period needs. The review was also benefitted by having an expert gas engineer review the DEU system operations and system requirements. Finally, based on our combined ability to request and review additional documents since the case held last year, we now have a more robust picture of the basis, if any, for the short-term and long-term peaking requirements needed to serve the DEU firm customer load. This additional expertise and scope of analysis has resulted in supporting my original view that these pipeline peak-period services contracts are unnecessary.

[41] Response to Discovery DPU 2.41.

Q. Mr. Lubow, are you aware that DEU has been taking delivery of gas from Kern River and DEQP under these agreements?

A. I am. However, absent these agreements, these same deliveries would have been made under the existing firm transportation contracts, without the need for costs associated with the peak-hour services under these new agreements.

Q. Do you have an opinion of whether these agreements were prudently entered, and are used and useful in providing reliable service to customers?

A. My conclusion is unchanged from the Docket No. 17-057-09 case. I do not believe that either the firm sales or firm transportation customers need or benefit from these Agreements for peak-hour services. The record evidence in this proceeding only further supports this conclusion.

Q. In light of the additional findings arising from the Overland analysis in this case, do you have any further recommendations for the Commission at this time?

A. I understand that DEU is filing for approval of an LNG facility within the period of the procedural schedule for this proceeding. However, in light of the evidence in this case, the Commission may wish to be more proscriptive at this time regarding the following items:

- Does the Commission expect DEU to be more aggressive in pursuing demand response programs?
- Assuming that the Commission agrees that there have been serious questions raised regarding the reliability of the peak-day and peak-hour models employed by DEU, to what extent should the Commission take any specific action at this time?
- Considering the apparent DEU policy to pursue gas expansion opportunities in Utah, what directives should the Commission provide, if any, in setting parameters for such projects?

Q. Does this conclude your prepared direct testimony?

A. Yes, it does.