BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

IN THE MATTER OF THE REQUEST OF DOMINION ENERGY UTAH FOR APPROVAL OF A VOLUNTARY RESOURCE DECISION TO CONSTRUCT AN LNG FACILITY	Docket No. 18-057-03

DIRECT TESTIMONY OF TINA M. FAUST

FOR DOMINION ENERGY UTAH

April 30, 2018

DEU Exhibit 2.0

TABLE OF CONTENTS

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Tina M. Faust. My business address is 333 S. State, Salt Lake City, UT.

Q. By whom are you employed and what is your position?

A. I am employed by Dominion Energy Utah (DEU or Company) as the Director of Gas Supply and Commercial Support. My qualifications are included in DEU Exhibit 2.01.

Q. Have you testified before this Commission before?

A. Yes.

Q. Attached to your written testimony are DEU Exhibits 2.01 through 2.14. Were these prepared by you or under your direction?

A. Except as otherwise stated, the exhibits were prepared by me or under my direction. The remaining exhibits are true and correct copies of what they purport to be.

Q. What is the purpose of your direct testimony?

A. I provide an overview of how natural gas is gathered from wells in remote production fields and transported to gate stations that connect with the DEU distribution system. I describe the risk of supply shortfalls associated with each step in that supply chain. I also discuss the supply shortfalls the Company has experienced in recent years, as well as those experienced by other similar local distribution companies in the western United States. Further, I explain the risks to our customers resulting from supply shortfalls, including the risk of loss of service on cold winter days.

I am also responsible for identifying the options available to ensure supply reliability to DEU's customers to avoid supply shortfalls and loss of service, and for evaluating those options. I offer testimony describing each option and explaining why the Company selected an on-system Liquefied Natural Gas (LNG) storage facility as the optimal

method for addressing its supply reliability risk, which is described in greater detail in DEU Exhibit 5.0, Direct Testimony of Michael L. Gill. In this regard, I provide evidence showing that the proposed LNG facility is the best option to ensure that, even on the coldest days, DEU can provide reliable and safe natural gas service to our customers.

II. NATURAL GAS: FROM WELLHEAD TO DEMAND CENTER

Q. How does natural gas typically flow from the wellhead to an LDCs system, like DEU's system?

A. Natural gas is produced in locations that are hundreds of miles away from DEU's demand center – its local distribution system that extends along the Wasatch Front, including Utah County, Salt Lake County, Davis County and Cache County. Most of the gas production that serves the DEU customers comes from thousands of wells in Utah, Wyoming and Colorado. A map showing producing basins where these wells are located, as well as the location of the interstate pipelines through which that gas is transported, is attached as DEU Exhibit 2.02. Producers produce natural gas from the gas wells and gather it through small-diameter lines to either processing plants or to interstate pipelines. The gas sent to processing plants typically has non-methane hydrocarbons and liquids that must be removed to obtain pipeline-quality natural gas that can be transported on interstate pipelines and ultimately used by end-use customers. The majority of processing plants that process gas for DEU are located in Wyoming. Once the wellhead gas has been gathered and processed, it is then transported by upstream interstate pipelines for delivery to DEU's distribution system. DEU Exhibit 2.03 shows the path natural gas takes from wellhead to demand center.

Q. Where along this natural gas path are supply disruptions likely to occur?

A. Supply disruptions can occur anywhere along the path the gas travels from the wellhead to DEU's distribution system. It is not uncommon during cold weather days for gas wells to "freeze off," meaning that a small amount of water produced with the natural gas crystallizes, blocks the flow of gas and shuts down production of the gas from the well. Since wells cannot produce gas during freeze offs, natural gas that would otherwise be

produced does not flow into the system and cannot be transported to DEU's customers. Similarly, cold weather can cause processing plants to cease operation, causing supply shortfalls. Processing plants are vulnerable to compressor failures, power outages, and other disrupting events, particularly during cold weather periods. Icy roads and remote plant locations also hamper the ability for workers to quickly remedy production and processing interruptions at wells and plants.

Supplies from interstate pipelines could be impacted by repair and maintenance on their facilities. Upstream pipelines may also be subject to third-party line damage, landslides, earthquakes, and other unanticipated events. Given the distance these pipelines travel and the varying geography of the areas through which they pass, such risks are not uncommon. To compound problems, line damage from third parties, landslides and earthquakes often occur in remote areas, preventing repair crews from quickly addressing line damage.

There are many ways supply may be disrupted before it reaches DEU's distribution system. When these disruptions occur, DEU does not receive the natural gas it requires, and is at risk of being unable to provide service to firm sales customers.

III. RISK OF SUPPLY SHORTFALLS

Q. Has DEU experienced supply disruptions like those you've described?

A. Yes. Unfortunately, disruptions in DEU's upstream supply chain have occurred in recent years, preventing gas supplies from reaching DEU's system even during non-Design Peak Days. For example, on January 6, 2017, the Intermountain West experienced very cold temperatures. In particular, in gas production areas in Wyoming, temperatures were significantly colder than in urban demand centers. For instance, the average daily temperature in Big Piney, Wyoming was minus 25° F. Early that morning, DEU became aware that processing plants were not delivering gas into Dominion Energy Questar Pipeline (DEQP). Through the nomination process DEQP notified DEU that supplies were not being delivered to the DEQP's system as expected. In fact, multiple processing plants experienced disruptions, and remained off-line or severely under-producing for the

remainder of the day. That same day, Kern River Gas Transmission Company (Kern River) also posted a notice that the Opal Processing Plant in Opal, Wyoming was experiencing a power outage. As a result of the upstream supply disruptions, DEU was short supplies for its firm sales customers and it was unclear how long the disruptions would last.

Q. Did this event result in a supply shortfall?

A. Yes, temporarily. Fortunately, because of the relatively short duration of this event, DEU was able to utilize additional storage withdrawals and purchase incremental gas to replace the expected shortfalls, and was able to maintain service. However, it is important to note that this event occurred on a day when the average temperature at the Salt Lake City Airport was 6° F, well above DEU's Design-Peak Day temperature. Had temperatures been lower, the Company would likely have been withdrawing storage volumes at maximum contractual rates. This means that the availability of incremental storage withdrawals would have been non-existent. The Company was fortunate that the cold weather was not prolonged and that the disruptions were resolved within a few days. Had the supply disruptions occurred on a Design-Peak Day, or if cold temperatures had persisted for a longer period of time, DEU likely would have lost service to firm sales customers.

Q. Has DEU experienced other such events?

A. Yes. Supply shortfalls have occurred multiple times for DEU during the last several years. In addition to January 6, 2017, DEU experienced supply shortfalls due to cold weather on December 5, 2013 and February 20, 2018. Fortunately, none of these cold weather events were Design-Peak Day events, and the disruptions were relatively short in duration.

Q. How does DEU respond to supply shortfalls?

A. Historically, DEU has been able to manage supply disruptions on days that are not Design-Peak Days by purchasing additional supplies and utilizing available storage. As

mentioned previously, on a Design-Peak Day all storage resources will be fully utilized. The Company's plan also assumes that all of its contracted supplies will be available, even though history shows that there is a high probability that it will experience some level of supply disruption. While relying on purchasing additional supplies on short notice is theoretically viable, many of these supplies could also be disrupted, fail to materialize as gas supply for the Company, and may not be available in the quantities needed, if at all. Not to mention that the costs of purchasing supplies on the spot market could be very high. Given the potential for supply disruptions, I am concerned that the Company's historical practices described above are not sufficient to maintain safe and reliable service to DEU customers. The Company has been fortunate that past disruptions have been of a relatively short duration and did not take place during design-day conditions. I do not believe it is wise to rely on good fortune to address supply reliability for our increasing customer load. This is why DEU is requesting approval for an on-system LNG storage facility.

Q. Have other LDCs experienced similar supply disruptions?

A. Yes. In February of 2011, New Mexico Gas Company and Southwest Gas Company experienced loss of gas service to more than 40,000 customers in New Mexico and Arizona. At that time, the Southwest United States was experiencing record-setting cold weather. Many customers were without heat for a full week, while crews worked to restore service. Also, DEU Exhibit 2.04 is an American Gas Association (AGA) SOS inquiry where respondents shared their past experiences with lack of supply reliability. In one case, in December of 2009, Northwest Natural Gas Company lost service to over 300 customers due to very cold weather coupled with unplanned equipment outages at a regional gas storage facility (Jackson Prairie) and the interconnection point of two upstream pipelines (Stanfield). These customers lost service for up to two days. In another instance, in February of 2018, ATCO Gas Distribution lost supply to its gate stations due to hydrates in the transmission system resulting in a freeze-off of transmission system control facilities that in turn supplied ATCO Gas Distribution.

Q. What is your understanding of the events that impacted Southwest Gas in 2011 that resulted in a shortfall of supply to customers?

A. According to Bill Moody, Vice President of Gas Supply for Southwest Gas, its Arizona customers receive natural gas supply from three basins that lost 1,000,000 Dth/day during the event. On March 2, 2011, the Arizona Corporation Commission held an open meeting for the purpose of discussing the loss of service to over 20,000 Arizona customers that resulted from the supply shortfall. I have attached, as DEU Exhibit 2.05, a transcript of that meeting. In addition, I provided DEU Exhibit 2.06, which is a copy of Bill Moody's PowerPoint that accompanied his presentation during that meeting. In explaining the events, Mr. Moody stated, "[W]e don't know until afterwards when we go out to purchase that gas and perhaps even the sellers of that gas to us are not certain whether or not that gas will show up" (DEU Exhibit 2.05, page 22-28). The day of the supply shortfall was "*a one in sixty year weather event*." *Id.* (emphasis added). In fact, in the days leading up to the event, Southwest Gas employees reported that they watched the weather forecast, had received "critical operating condition emergency" notifications from the upstream pipelines that they were "experiencing major difficulties", and had purchased gas to meet their anticipated demand. *Id.* Southwest Gas also had an emergency plan, which it followed, and complied with its winter operations guide. Notwithstanding those preparations, Southwest Gas employees watched as the system pressures dropped on the morning of February 2, 2011. Southwest Gas began to prepare for curtailment, in the event that pressures continued to drop. Southwest Gas sent field personnel out to critical facilities starting at 10:00 p.m. to monitor and ensure that no mechanical issues occurred due to the cold weather. On February 3, the first alarm occurred showing pressures were dropping to the point where customers were losing service. *Id.*

Q. If DEU experienced a disruption similar to Southwest Gas (or the other LDCs identified above), how would that impact DEU's customers?

A. If DEU's system experienced a similar supply disruption, and its customers lost service for a week, the consequences could have been even more catastrophic than in Arizona.

On April 6, 2011, the Arizona Corporation Commission held an Open Meeting to allow customers to discuss the consequences of the outage. DEU Exhibit 2.07 is a copy of the transcript of that open meeting. During that meeting, customers in Arizona reported significant difficulties resulting from the outage. For instance, customers described the loss of heat in residences, including where elderly people lived. They reported significant health risks to others. One 86-year-old man spent days in his living room chair under blankets near a space heater (DEU Exhibit 2.07, page 32).

Because Utah winters are substantially colder than the temperatures that existed in Arizona in 2011 when the service disruption occurred, I would expect the consequences for customers to be far more serious. Customers in Utah have to cope with much colder temperatures and, by extension, risk far more severe consequences to customers' health and safety.

Additionally, if DEU experienced a similar outage to Arizona, I would expect significant property damage. During the 2011 outage, Arizona residents reported "living out of a suitcase" over 3 months after the outage because homes had been "destroyed" by burst pipes (DEU Exhibit 2.08, page 23). As temperatures in Utah are far colder, I would anticipate water pipe and home damage to be much more extensive.

Further, one would also expect businesses to suffer similar damage, as well as consequential losses, such as the loss of product and sales. For instance, Loews Ventana Canyon Resort in Arizona reported that, during the 2011 outage, it was unable to provide heat or hot water for its guests during the entire outage. The resort reported that the outage cost it at least $200,000 (DEU Exhibit 2.08, page 10). When DEU has directed its Firm Transportation customers to limit usage to match the supply being delivered on their behalf, in response to their own upstream supply disruptions, many customers have expressed concern about lost product, business losses, and damaged equipment.

If a significant supply shortfall resulted in a loss of service, DEU's firm sales customers could face severe losses. In addition to the foregoing, in DEU Exhibit 3.0, Direct Testimony of Michael L. Platt details the anticipated costs DEU would suffer, if such an outage occurred. He estimates the high cost of relighting customers and discusses the economic impact such an outage would have on the State of Utah. The cost of an outage for customers, the Company and the State collectively would be significant.

Q. How did regulators in Arizona respond to the public at the April 2011 public meetings?

A. The Arizona commission recognized the seriousness of the outage. Commissioner Stump stated: "This obviously is a matter of public health and often survival. We heard many stories last night and, of course, today in which that was very much the case. And there is really nothing more serious than matters relating to public health and survival." *See* DEU Exhibit 2.08, page 34.

Q. Did regulators take any action after the outages in the Southwest in February 2011?

A. Yes. The Federal Energy Regulatory Commission (FERC), the New Mexico Public Regulation Commission (NMPRC) and the Arizona Corporation Commission (ACC) all launched investigations into this event.

Q. Please describe the FERC inquiry.

A. FERC initiated an inquiry into the gas outage and service disruptions on February 14, 2011. Its objectives were to identify the causes of the disruptions and to determine how to prevent a recurrence. On May 9, 2011, FERC and the North American Electric Reliability Corporation (NERC) announced that they would create a joint task force, and in August 2011, the task force published a joint report on the findings ("FERC/NERC Report").

Q. What did the task force conclude regarding the cause of the 2011 natural gas outage?

A. The FERC/NERC Report stated that "the difficulties encountered by LDCs in trying to meet customer demand stemmed principally from supply declines in the basins, and secondarily from problems encountered at processing plants." DEU Exhibit 2.09.1, page 4, FERC Report on Outages and Curtailments During the Southwest Cold Weather Event of February 1-5, 2011 (August 2011). In addition, the FERC found that, "a substantial number of wells in the affected basins suffered freeze-offs, which had a significant effect

on production during the February cold weather event." *Id. See* page 6. The report estimated that the total U.S. natural gas supply during the event was reduced 9.4% per day due to cold weather. This was comparable to previous production shut-ins associated with interruptions caused by hurricanes, (DEU Exhibit 2.09.2, page 5). Production declined 21% in the basins in Texas and New Mexico and "the declines in these basins, together with the large increases in demand, were almost exclusively responsible for the gas curtailments in Texas, New Mexico and Arizona." *Id. See* page 6.

In summary, the FERC concluded that cold weather resulted in "widespread wellhead, gathering system and processing plant freeze-offs and hampered repair and restoration efforts" and that the "prolonged cold caused production shortfalls in the San Juan and Permian Basins, the main supply areas for the LDCs that eventually curtailed service to customers in New Mexico, Arizona and Texas." *See* DEU Exhibit 2.09.3, page 4.

Q. Did the FERC/NERC Report discuss storage as a solution to the 2011 natural gas outage?

A. Yes. The FERC/NERC Report stated:

> Additional gas storage capacity in Arizona and New Mexico could have prevented many of the outages that occurred by making additional supply available during the periods of peak demand. Natural gas storage is a key component of the natural gas grid that helps maintain reliability of gas supplies during periods of high demand. Storage can help LDCs maintain adequate supply during periods of heavy demand by supplementing pipeline capacity, and can serve as backup supply in case of interruptions in wellhead production. *Additional gas storage capacity in the downstream market areas closer to demand centers in Arizona and New Mexico could have prevented most of the outages that occurred by making additional supply available in a more timely manner during peak demand periods.*

See DEU Exhibit 2.09.3, page 5 and 6 (emphasis added).

Q. Did the New Mexico Public Regulation Commission find a cause for the February 2011 outage?

A. The NMPRC concluded in December 2012 that "the February 2011 system emergencies were caused by a combination of a failure of upstream industry segments to supply and deliver scheduled gas to NMGC because of a severe winter storm affecting the southwestern U.S., weather-driven freeze-offs and rolling electrical blackouts in Texas, and high weather-driven demand for gas by NMGC customers." *See* DEU Exhibit 2.10, page 20.

Q. Did the Arizona Corporation Commission comment on the February 2011 outage?

A. Yes. On March 2, 2011, the ACC held an Open Meeting regarding the outage. Attached as DEU Exhibit 2.05 is a copy of the transcript of that meeting. During the meeting, Arizona Commissioner Kennedy stated: "When outages like this occur, *human health and safety is really put at risk and significant financial losses to businesses.* And I am concerned about that." *Id. See* page 79 (emphasis added). He added, "I don't want the past to occur in the future. *What we do here in Arizona might be able to assist other providers around the United States so they don't fall into the same shoes as we did here today.*" *Id. See* page 80 (emphasis added).

Q. Did Southwest Gas take any steps to prevent future outages?

A. Yes. After the event, Southwest Gas sought Commission pre-approval of an on-system LNG facility for the purpose of ensuring supply reliability. The Arizona Corporation Commission approved the construction of the proposed facility, and it is now under construction.

Q. Has the Company experienced any other events that could have resulted in supply and service disruptions?

A. Yes. In January of 2005, St. George, Utah experienced significant flooding that washed away homes and damaged infrastructure. Fortunately, the Company was able to continue

safely serving remaining customers, but it had to close block valves to isolate portions of its feeder lines, leaving some customers without service.

Also, on August 5, 2014, a large landslide impacted a hillside in upper North Salt Lake, adjacent to a DEU's feeder line and the Kern River pipeline. The landslide destroyed homes and property and, for a period of time, put DEU and Kern River facilities at risk. Again, the Company was able to maintain safe and reliable service to the customers who were not directly impacted by the landslide by isolating its feeder line. Both events are recent examples of flooding and landslide events that could have had far more serious impacts had the circumstances played out differently. Had lines been more seriously damaged, service disruptions would have resulted.

Q. Given the supply shortfalls that DEU and other utilities have experienced during cold weather, how confident are you that DEU will be able to avoid supply disruptions and related loss of service in the future with the Company's existing resources?

A. I am not confident at all. Extreme weather and the resulting lack of gas supply reliability are unpredictable and unforeseeable events. Weather forecasts can change quickly and extreme cold can last longer than predicted. Shortfalls in supply are even less predictable. Supply shortfalls have occurred historically and will continue to occur, and I do not believe it is wise for the Company to simply hope that it will be fortunate in avoiding a more major supply shortfall. Currently DEU relies on all of its current supply options to perform on a Design-Peak Day, yet DEU has seen in recent years that supply shortfalls happen even when temperatures are moderately cold. While DEU has been able to get by with its current supply portfolio only suffering the consequence of the fairly limited supply disruptions it has experienced in recent years, none of the events occurred when the temperatures were approaching Design-Peak Day temperatures. DEU must have plans in place to address supply shortfalls in the event of more serious supply disruptions to ensure that its firm service customers do not lose natural gas service. For this reason, DEU has undertaken to explore available supply alternatives to ensure service reliability.

IV. SUPPLY RELIABILITY OPTIONS

Q. How much additional gas supply would DEU have to obtain to ensure service during a supply shortfall on a Design-Peak Day?

A. Based on recent experience, DEU has determined that it would need a solution that would provide 150,000 Dth/day for at least 8 days to avoid a potentially catastrophic disruption. On January 6, 2017, DEU experienced a supply shortfall of over 100,000 Dth/day. Because DEU's system is growing, and because there is potential for weather to be much colder than it was on January 6, 2017, DEU would need a higher level of supply to mitigate winter-time shortfalls.

Q. Has the Company explored alternatives to address supply reliability issues?

A. Yes. For some time, the Company has been carefully considering the options available to address the disruption scenarios discussed above. The goal of this effort was to identify the most advantageous option to provide a reliable supply source in the event of a supply disruption on a very cold day. DEU reviewed each option considering first whether the option would provide adequate, safe, and reliable supply when planned supplies are disrupted on a cold day. The Company also considered the cost associated with each option, the risks associated with each option, and other relevant factors. After evaluating the options, DEU concluded that the construction of an on-system LNG storage facility in close proximity to its demand center would best address the supply reliability risk. DEU Exhibit 2.11 is a Supply Reliability Option Evaluation Summary that discusses in more detail each option considered, as well as the factors presented by each. In addition, DEU conducted a risk analysis, which is contained in DEU Exhibit 2.12. This analysis discusses the likelihood of a supply shortfall occurring and the potential magnitude of the consequences if such a shortfall happened. The risk analysis in DEU Exhibit 2.12 was used in the consideration of the supply reliability options, and is referenced in DEU Exhibit 2.11.

Q. Please summarize the options considered.

A. The first option considered was to essentially continue with the status quo, by continuing to take the steps the Company has pursued in the past to address supply shortfalls. This option is discussed in more detail in DEU Exhibit 2.11, page 6 and is referred to as the "Utilize Existing Resources" option. This alternative would involve preserving the existing aquifer supply and likely contracting for additional peaking supplies to be delivered at Goshen. This option relies on upstream sources and third parties to provide the necessary additional supply. As mentioned earlier, the supply disruptions DEU has experienced in recent years have occurred on cold days, but not a Design-Peak Day. Relying on the measures the Company has used in the past could result in a significant loss of service to customers if a disruption occurs on a colder day, or for a more prolonged period of time. This, together with future demand growth, the potential for a significant supply shortfall and the high cost of the consequences of such an event, make this a very high-risk option.

Q. Why wouldn't this option provide adequate gas supply reliability?

A. In order to mitigate a supply shortfall, DEU would have to call upon its aquifer storage supplies from DEQP. However, withdrawals from the Aquifers are already included as a critical component of the Company's Design-Peak Day supply portfolio. If DEU reserved the Aquifers to address a supply disruption on a Design-Peak Day, it would need to replace this supply in its Design-Peak Day supply portfolio. In other words, by pursuing this option, the Company would need to look for another third-party supply resource, making the Design-Peak Day even more susceptible to supply shortfalls and therefore would provide little incremental benefit. In addition, this option would rely on a third-party for storage and transportation (with resulting NAESB nomination requirements), and therefore would not result in increased supply reliability (DEU Exhibit 2.12, page 9).

Q. Did DEU explore demand response programs as a solution?

A. Yes. DEU considered demand response as an option to reduce gas load when supply

shortfalls occur. DEU looked at demand response programs for both larger and smaller customers.

Q. Can you describe this alternative?

A. First I will discuss an option for larger customers. A large customer demand response program requires the installation of equipment to allow DEU to remotely shut off large customers' gas service (DEU Exhibit 2.11, pages 8 and 9). In addition, the program would have to involve a sufficient number of customers to ensure that supply would be available in the event of a significant supply disruption. The program would also have to recognize that customer location would play a role in determining whether a demand response would be required in a given situation.

Q. Could temporarily stopping service to large customers adequately address a supply shortfall?

A. Not reliably. If DEU were to install remote control valves, the Company could have complete control over the reduction of the customers' usage. However, the Company would still not have control over the *availability of supply*. There is no guarantee that the customers being curtailed actually have gas being delivered to the system on the day that DEU would need replacement supplies, particularly if the surrounding system or the source of supply is being impacted by similar supply disruptions. In fact, given that these customers purchase gas supply from many of the same remote gas fields that DEU's gas comes from, and that it travels through the same third-party gathering, processing and interstate transportation systems, it is quite likely that, if DEU is experiencing a supply shortfall, large customers would also be experiencing supply shortfalls. To the extent that they rely on interruptible rather than firm upstream transportation, their supply situation could be even worse. Put otherwise, if large customers were not receiving their gas supply from upstream sources, having the ability to remotely shut off that customer's gas would provide no replacement gas to assist with DEU's system's supply shortfall.

Q. Are there other negative aspects of this option?

A. Yes. Large customers are firm transportation customers who rely on their gas supply to support and maintain their businesses. If DEU experienced a supply shortfall and were to rely on demand response as a method for sustaining the necessary supply, large customers would be placed in a position where they could lose gas service on very short notice with no clear way to protect their businesses. Terminating service with little or no notice could upset production processes, destroy equipment, and result in significant financial losses and property damage.

Q. Please describe the second demand response option for reducing the usage of smaller customers.

A. The Company also evaluated voluntary demand response programs that have been used by SoCal Gas (DEU Exhibit 2.11, pages 10 and 11). This alternative would rely on firm sales customers to voluntarily lower their thermostats when the Company experiences a supply shortfall.

Q. Could this option realistically address a significant supply shortfall?

A. No. This option is very unreliable and unpredictable and, as a result, would not be an adequate solution in the event of a supply shortfall. In fact, SoCal Gas used similar programs, and concluded that the 2016-2017 demand response programs did not result in a statistically significant reduction in gas usage by its customers (DEU Exhibit 2.13, SoCal Gas 2016-2017 Winter Demand Response Load Impact Evaluation). This is not surprising as demand response with small firm customers would be a voluntary program. Furthermore, even if a sufficiently significant portion of firm sales customers were willing to participate, this option would depend on each of those customers lowering their thermostats at the appropriate time. Imagine what would happen if a supply shortfall occurred in the middle of the night or early morning. Customers would likely be sleeping and would want their homes to be well heated, particularly during very cold spells. The Company could not rely on customers in this circumstance to respond to a supply interruption notice to solve a disruption. Therefore, this option is not a reliable solution

414 to a supply shortfall.

415 **Q. Did DEU consider options provided by third parties?**

416 A. Yes. The Company explored eight options that rely on third-party off-system storage and
417 some form of interstate transportation to the DEU city gate.

418 **Q. Can you describe these alternatives?**

419 A. Four of the alternatives involve acquiring incremental storage and transportation services
420 using existing off-system facilities. The Company considered utilizing storage at
421 Ryckman Creek Gas Storage LLC, Clay Basin Gas Storage, Jackson Prairie Gas Storage
422 and the Coalville/Chalk Creek Aquifer Gas Storage facilities. These options are
423 explained on pages 21 through 28 of DEU Exhibit 2.11.

424 **Q. Can you summarize why off-system storage options would not be a reliable solution**
425 **to resolve a supply shortfall?**

426 A. Off–system storage and market supplies are dependent on interstate pipelines which need
427 to be nominated on a schedule set by NAESB. The NAESB nomination schedule is
428 shown on pages 13 and 14 of DEU Exhibit 2.12. Supply shortfalls often occur at night,
429 after the NAESB nomination schedule has already commenced. Replacement gas is
430 often not available in later nomination timeframes, especially during periods of high
431 demand. For a more detailed discussion of risks associated with the NAESB nomination
432 schedule, see DEU Exhibit 2.12.

433 Q. **Are there other concerns related to the transportation of gas from off-system**
434 **storage options as solutions for supply shortfalls?**

435 A. Yes. As I mentioned earlier, the geographic distance increases the risk that, somewhere
436 along that path, there could be third-party damage to a line, a landslide, a freeze-off, or
437 some other event that impedes gas supply to DEU's system. Relying on storage (that is

438 geographically distant from the DEU demand center) does not eliminate the risks of
439 supply shortfalls (DEU Exhibit 2.12).

440 **Q. Are there availability concerns with these options?**

441 A. Yes. Additional storage service is also largely unavailable. Currently there is no
442 incremental firm storage capacity available at Clay Basin or Jackson Prairie. Though it
443 may be possible to obtain more storage in the Aquifers, DEQP has indicated that, in order
444 to determine if additional storage is available, DEU must jointly fund a feasibility study
445 and a Front End Engineering Design (FEED) study for improvements to the Aquifers that
446 would allow expansion. Even if additional storage were available, DEQP has indicated
447 this option only provides up to [redacted] Dth/day (DEU Exhibit 2.11, page 27). This
448 amount is substantially lower than the amount required.

449 **Q. Given these considerations, do you believe that additional third-party owned off-**
450 **system storage and upstream transportation is a reliable solution to a supply**
451 **shortfall?**

452 A. No. Even if the options were available, they would still ultimately rely on multiple third
453 parties to remedy a supply shortfall. Any of these solutions would be vulnerable to many
454 of the same risks the Company is trying to remedy with an on-system LNG facility.

455 **Q. Did you explore any alternatives that delivered gas to a DEU city gate?**

456 A. The Company explored entering into a storage contract with Magnum Energy (Magnum)
457 [redacted][1]

458 **Q. Can you describe this alternative?**

459 A. Yes. Under this option, Magnum would create a salt cavern for natural gas storage at its
460 facility near Delta, Utah [redacted]

1 The option involving delivery at [redacted] is the most recently-submitted Magnum option and supersedes other proposed bundled storage contract options at [redacted] and [redacted].

[redacted]. Additionally, in order for either options to be a viable alternative, DEU would need to construct a new interconnect facility to receive this gas into its distribution system. A more thorough explanation of all Magnum options (including a map) is given on pages 12 through 20 of DEU Exhibit 2.11.

Q. Are there challenges that would exist with these options?

A. Yes. Magnum's salt cavern facility is over 100 miles from the DEU demand center. DEU would need to make substantial facility additions along with paying for the storage service. As Mr. Gill explains, these DEU interconnect facilities at [redacted] would cost [redacted] (DEU Exhibit 5.0).

Q. What other alternatives has DEU explored?

A. DEU explored entering into a storage contract with Magnum [redacted] (DEU Exhibit 2.11, page 15 and 16).

Q. Why did the Company reject this option?

A. To ultimately get the gas from [redacted] to DEU's demand center, DEU would need to [redacted] While Magnum Storage may be part of DEUs supply portfolio in the future, it is not the best option to remedy the supply shortfalls the Company is seeking to currently address.

Q. What other alternatives have you explored?

A. The Company also explored entering into a contract with Magnum whereby DEU would [redacted] (DEU Exhibit 2.11, page 17 and 18).

Q. Would you recommend this option for supply reliability?

A. No. [redacted]

Q. What other alternatives have you explored?

A. Dominion Energy explored an on-system storage option utilizing an LNG facility. Mr. Gill describes this facility in detail in his direct testimony (DEU Exhibit 5.0).

Q. Would this option provide supply reliability in the event of a supply disruption?

A. Yes. An on-system LNG facility would provide a reliable source of replacement supply that would be operated and dispatched by DEU in the event of a supply disruption. On-system storage provides flexibility, diversity of supply and reliability that other supply options simply cannot. Reliability is an attribute that cannot be overstated. In fact, an LNG facility is the only alternative that provides a supply reliability solution for all the risks the Company has identified. In addition, gas from on-system storage does not need to be purchased or nominated at the time of need, and is delivered directly to the distribution system on short notice. With a 15 million gallon LNG storage tank, the Company could vaporize 150,000 Dth/day, all day, for eight consecutive days and be able to maintain pressure for firm customers in the event of supply shortfalls or other system emergencies. Because an LNG facility could be located very near the demand center, this option would provide immediate help and is not dependent on long transmission pipelines that are vulnerable to land movement, third-party damage, forest fires, floods, washouts, corrosion, regulatory shutdowns, earthquakes, and other force majeure events (DEU Exhibit 2.11, pages 31 and 32). As described by Mr. Gill, the facility itself can be designed to mitigate local risks that could impact the site (DEU Exhibit 5.0).

Q. The cost of the proposed LNG facility is more than some of the options you considered. Given that, why did the Company select the LNG option?

A. As I mentioned, without having salt caverns or depleted gas reservoirs near our demand

center, an on-system LNG storage facility is the only alternative that will fully address the supply reliability risk in the event of upstream supply disruptions. In other words, while other options considered could be less expensive, they do not address the underlying reliability issue and, for that reason, are not viable alternatives. On-system storage is used by many utilities in North America for supply reliability. Off-system solutions are vulnerable to the same disruptions the Company and other previously mentioned LDCs have recently experienced. The LNG option would not be subject to these same risks, and would provide safe and reliable service in the event of a supply shortfall like those the Company has experienced over the past five years.

Q. In conducting your evaluation, did you consider what other utilities have done to address supply reliability concerns?

A. Yes. After the 2011 outage, Southwest Gas began evaluating solutions to its supply reliability problem. It conducted an analysis and determined that an on-system LNG facility was the best solution. Southwest Gas is currently constructing that facility near Tucson.

In its Application in Docket No. G-01551A-14-0024, Southwest Gas stated, "The primary purpose of the proposed LNG storage facility is to have readily available local gas supply to dispatch into Southwest Gas' distribution system during severe supply disruption events" (DEU Exhibit 2.14, page 5). Southwest Gas also observed, "By having readily available local natural gas supply that can be timely dispatched into sections of its distribution system upon demand, an LNG storage facility will support Southwest Gas' ongoing efforts to enhance the reliability of segments of its distribution system and mitigate against future service interruptions resulting from supply shortage events." *Id. Page* 6.

Q. Do other utilities have on-system LNG facilities that are used to maintain supply reliability in the event of a supply disruption?

A. Yes. Out of 50 respondents to a recent AGA survey, 20 LDCs stated they used on-system LNG to maintain supply reliability. DEU Exhibit 2.04.

Q. In addition to the supply reliability benefits discussed above, are there any other ancillary benefits?

A. Yes. The Company could utilize this facility to provide service to remote communities at a lower cost than extending pipeline facilities to these customers. For example, it would cost approximately $95 million for a high-pressure mainline to serve the town of Kanab versus a satellite LNG facility at a cost of approximately $22 million. Likewise, the town of Green River could be served via high pressure mainline at a cost of approximately $43 million versus serving the same community with satellite LNG at a cost of approximately $15 million. Additionally, the Company could utilize LNG to maintain service to customers during maintenance or an emergency.

Q. Can you summarize your recommendation?

A. Yes. Based on recent events on the DEU system and in other areas near DEU's system, there is currently a risk that during a cold weather event, or other unpredictable supply shortfalls, a significant portion of DEU's gas supply will be disrupted. Based on the Company's evaluation of costs, risks and reliability, an on-system LNG storage facility is the most reliable option to offset these anticipated supply shortfalls. I recommend that the Commission find that the construction and operation of an on-system LNG storage facility is in the public interest and approve the Company's Application in this matter.

Q. Do you believe that approval of the application in this docket is just, reasonable and in the public interest?

A. Yes.

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

A. Yes.

State of Utah)
) ss.
County of Salt Lake)

I, Tina M. Faust, being first duly sworn on oath, state that the answers in the foregoing written testimony are true and correct to the best of my knowledge, information and belief. Except as stated in the testimony, the exhibits attached to the testimony were prepared by me or under my direction and supervision, and they are true and correct to the best of my knowledge, information and belief. Any exhibits not prepared by me or under my direction and supervision are true and correct copies of the documents they purport to be.

Tina M. Faust

SUBSCRIBED AND SWORN TO this 27th day of April, 2018.

Notary Public

LEORA N. PRICE
Notary Public State of Utah
My Commission Expires on:
August 19, 2018
Comm. Number: 677685