OCS – 2D Mierzwa

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

JEROME D. MIERZWA

FOR THE OFFICE OF CONSUMER SERVICES

August 16, 2018

EXETER
ASSOCIATES, INC.
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DIRECT TESTIMONY OF JEROME D. MIERZWA

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Jerome D. Mierzwa. I am a Principal and Vice President with Exeter Associates, Inc. ("Exeter"). My business address is 10480 Little Patuxent Parkway, Suite 300, Columbia, Maryland 21044. Exeter specializes in providing public utility-related consulting services.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A. I graduated from Canisius College in Buffalo, New York in 1981 with a Bachelor of Science Degree in Marketing. In 1985, I received a Master's Degree in Business Administration with a concentration in finance, also from Canisius College. In July 1986, I joined National Fuel Gas Distribution Corporation ("NFGD") as a Management Trainee in the Research and Statistical Services Department ("RSS"). I was promoted to Supervisor RSS in January 1987. While employed with NFGD, I conducted various financial and statistical analyses related to the company's market research activity and state regulatory affairs. In April 1987, as part of a corporate reorganization, I was transferred to National Fuel Gas Supply Corporation's ("NFG Supply's") Rate Department, where my responsibilities included utility cost of service and rate design analysis, expense and revenue requirement forecasting, and activities related to federal regulation. I was also responsible for preparing NFG Supply's Federal Energy Regulatory Commission ("FERC") Purchased Gas Adjustment ("PGA") filings and developing interstate pipeline and spot market supply gas price projections. These forecasts were utilized for internal planning purposes as well as in NFGD's annual state purchased gas cost review proceedings in Pennsylvania.

In April 1990, I accepted a position as a Utility Analyst with Exeter. In December 1992, I was promoted to Senior Regulatory Analyst. Effective April 1, 1996, I became a Principal of Exeter. Since joining Exeter, I have specialized in evaluating the gas purchasing practices and policies of natural gas utilities, utility class cost of service and rate design analysis, sales and rate forecasting, performance-based incentive regulation, revenue requirement analysis, the unbundling of utility services, and evaluation of customer choice natural gas transportation programs.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. Exeter was retained by the Office of Consumer Services ("OCS") to assist in evaluating the Application of Dominion Energy Utah ("DEU" or the "Company") for approval under the Voluntary Request for Resource Decision Review statute (Utah Code Ann. §54-17-402) and applicable Commission rules and regulations for its decision to construct an on-system Liquefied Natural Gas ("LNG") storage facility.

Q. HAVE YOU PREVIOUSLY TESTIFIED ON UTILITY RATES IN REGULATORY PROCEEDINGS?

A. Yes. I have provided testimony on more than 300 occasions in proceedings before the FERC and state utility regulatory commissions in Arkansas, Delaware, Georgia, Illinois, Indiana, Louisiana, Maine, Massachusetts, Montana, Nevada, New Jersey, Ohio, Pennsylvania, Rhode Island, Texas, and Virginia, as well as before this Commission. I have previously testified before this Commission in Docket No. 14-057-31, in which DEU proposed to implement a transportation customer imbalance charge; Docket No. 17-057-09, in which DEU proposed to charge transportation customers for interstate pipeline peak hour services; and Docket No. 17-057-03 and Docket No. 17-057-20, in which DEU proposed to acquire and recover the costs associated with interstate pipeline peak hour services.

Q. BEFORE CONTINUING, WHAT IS YOUR EXPERIENCE WITH RESPECT TO EVALUATING THE GAS PROCUREMENT PRACTICES OF NATURAL GAS DISTRIBUTION COMPANIES ("NGDCs") LIKE DEU?

A. Over the last 28 years, I have reviewed and assessed the gas procurement practices of approximately 40 different NGDCs. For many of these NGDCs, I have performed gas procurement reviews on an annual basis. In total, I estimate that I have performed approximately 200 such reviews. These assessments include review of an NGDC's capacity and gas supply resource portfolios. An NGDC's capacity resource portfolio would generally include those resources necessary to deliver gas supplies to the NGDC's distribution system (citygate) such as firm interstate pipeline transportation service. An NGDC's gas supply portfolio would generally include purchase arrangements that provide for the availability of gas at interstate pipeline receipt points which are then subsequently delivered to the NGDC utilizing the NGDC's capacity resource portfolio, and interstate pipeline storage service. Gas withdrawn from interstate pipeline storage facilities would also generally be delivered to an NGDC utilizing the NGDC's capacity resource portfolio. Gas supply arrangements that provide for the delivery of gas directly to an NGDC's citygate would also be considered a capacity resource. An NGDC's on-system storage facilities, including underground storage, LNG and propane facilities, can also be considered combined capacity and gas supply resources.

Q. PLEASE BRIEFLY DESCRIBE HOW YOUR TESTIMONY IS ORGANIZED.

A. My testimony is presented in seven sections, including this introductory section. The second section of my testimony describes the proposed LNG facility and DEU's

claimed need for the facility. The following section discusses gas industry management of supply disruptions affecting system reliability. The fourth section of my testimony assesses DEU's evaluation of its supply reliability solutions. This is followed by a discussion of the resiliency of the DEU system. The sixth section of my testimony addresses the recovery of the costs associated with the proposed LNG facility if the Commission approves DEU's decision. The final section of my testimony presents my conclusions and recommendations. All citations to DEU's responses to data requests are documented in Exhibit 2.1.

II. DEU LNG PROPOSAL

Q. BRIEFLY DESCRIBE THE LNG FACILITY FOR WHICH DEU IS SEEKING APPROVAL.

A. DEU is proposing to construct an on-system LNG storage facility near Magna, Utah. The proposed facility would provide for the delivery of up to 150,000 Dth per day of gas directly into DEU's distribution system for up to 8.3 days. The capacity of the LNG facility would be approximately 1,250,000 Dth.

Q. WHY IS DEU PROPOSING TO CONSTRUCT AN ON-SYSTEM LNG FACILITY?

A. DEU claims that the Company has experienced gas supply disruptions in recent years which prevented sufficient nominated (purchased) supplies from reaching DEU's system due to well freeze-offs. To date, DEU has been able to manage supply disruptions by purchasing additional supplies and utilizing supplies available under its interstate pipeline storage arrangements. These supply disruptions have occurred on days that were warmer than the Company's design day. The Company is concerned that if well freeze-offs were experienced under design day conditions, the Company

would not be able to manage those disruptions without additional capacity and/or gas supply resources and that system reliability could be threatened. The Company believes that the proposed LNG facility would provide the additional resources necessary to manage a supply disruption on a design day.

Q. BEFORE CONTINUING, PLEASE EXPLAIN WHAT THE TERM "DESIGN DAY" REFERS TO FOR AN NGDC LIKE DEU.

A. A design day is an extremely cold day that an NGDC selects and utilizes for capacity and gas supply resource planning purposes. An NGDC would typically reserve upstream interstate pipeline capacity and gas supply resources sufficient to meet the design day gas supply requirements of its sales customers. An NGDC may also reserve resources to meet the design day balancing requirements of its transportation customers.

Q. WHAT ARE THE WEATHER CONDITIONS THAT DEU USES TO DETERMINE THE DESIGN DAY REQUIREMENTS OF ITS SALES CUSTOMERS?

A. The design day weather criteria historically utilized by DEU for capacity and gas supply resource planning purposes is a day with an average temperature of -5˚F, or 70 HDDs, a maximum windspeed of 47 mph, and an average windspeed of 26 mph. A day with 70 HDDs last occurred in 1963. I would note that recently in Docket No. 17-057-20, the Commission found DEU's design day windspeed criteria to be unreasonable. I am not aware if DEU has modified its design day criteria as a result of the Commission's recent order in Docket No. 17-057-20.

Q. PLEASE PUT INTO PERSPECTIVE THE 150,000 DTH/DAY LNG FACILITY WHEN COMPARED TO THE DESIGN DAY REQUIREMENTS OF DEU'S CUSTOMERS.

A. DEU intends that the proposed LNG facilities would be placed in service for the winter of 2022-2023. The design day requirements of DEU sales customers are projected to be 1,353,028 Dth for the winter of 2022-2023 (see DEU response to OCS data request 1.03). Therefore, the proposed LNG facility represents slightly more than 10 percent of the projected design day requirements of DEU's sales customers. The design day requirements of DEU firm transportation customers are projected to be 463,000 Dth for the winter of 2022-2023. (DEU 2018-2019 IRP, Exhibit 3.9) Combined, the projected design day requirements of DEU sales and transportation customers are 1,816,028 Dth, and the proposed LNG facility would represent approximately 8 percent of total projected design day requirements.

Q. HAVE THERE BEEN INSTANCES OF SIGNIFICANT LOSS OF GAS SERVICE TO CUSTOMERS EXPERIENCED BY OTHER NGDCs DUE TO SUPPLY DISRUPTIONS ATTRIBUTABLE TO COLD WEATHER CONDITIONS?

A. DEU claims that in February 2011, New Mexico Gas Company and Southwest Gas Company in Arizona experienced the loss of gas service to more than 40,000 customers in New Mexico and Arizona due to well freeze-offs and other problems caused by record setting cold temperatures. The primary interstate pipeline delivering gas supplies to New Mexico Gas Company and Southwest Gas Company is El Paso Natural Gas Company, L.L.C. ("El Paso"). DEU also claims that in response to a loss of service to customers, Southwest Gas Company sought and received approval from its commission to construct an on-system LNG facility. OCS witness Bela Vastag further discusses why the OCS asserts that this example is not analogous to DEU's situation.

Q. WHAT IS THE ANTICIPATED IMPACT OF THE LNG FACILITY ON THE RATES OF A TYPICAL SALES CUSTOMER?

A. DEU claims that the annual revenue requirement associated with the LNG facility is $24 million. The annual impact on a typical GS sales customer would be $18.75.

Q. EARLIER YOU INDICATED THAT DEU HAS BEEN ABLE TO MANAGE PREVIOUS SUPPLY DISRUPTIONS, BUT IS CONCERNED THAT THESE SUPPLY DISRUPTIONS MAY OCCUR ON A DESIGN DAY WHEN THE COMPANY CLAIMS IT DOES NOT HAVE THE RESOURCES TO MANAGE A SUPPLY DISRUPTION. PLEASE COMMENT ON THE ANTICIPATED COST OF MEETING A DESIGN DAY SUPPLY DISRUPTION WITH THE LNG FACILITY PROPOSED BY DEU.

A. As indicated previously, DEU utilizes a design day temperature criteria of -5˚F, or 70 HDDs. A day with an average temperature of -5˚F or colder has not been observed in DEU's service territory since 1963, 55 years ago. A day with an average temperature of -4˚F was experienced in 1990, nearly 30 years ago. Assuming *arguendo*, that both a design day was experienced and a supply disruption also occurred on that design day, and the LNG facility was able to alleviate the impact of the disruption, based on a once in 55-year probability of occurrence, the LNG facility's design day service would cost sales customers $1.32 billion (55 years times $24 million per year), and the average customer over $1,000 (55 years times $18.75 per year). Assuming a one-in-30-year probability of occurrence under the same circumstances, the total cost to sales customers would be $720 million, or an average of $560 per customer.

III. GAS INDUSTRY MANAGEMENT OF SUPPLY DISRUPTIONS AFFECTING SYSTEM RELIABILITY

Q. IN DEU CONFIDENTIAL EXHIBIT 2.04, THE COMPANY PRESENTS AN AMERICAN GAS ASSOCIATION ("AGA") SURVEY WHICH IT INITIATED THAT INDICATES 45 PERCENT OF THE RESPONDING NGDCs OPERATE AN ON-SYSTEM LNG FACILITY TO MAINTAIN SYSTEM SUPPLY RELIABILITY. IS THAT A RELEVANT STATISTIC FOR THIS PROCEEDING?

A. No. First, 45 percent refers only to the group of NGDCs that responded to the survey and not the entire population of US NGDCs (total US NGDCs are approximately 1,400[1]). In total, 50 NGDCs responded to the AGA survey.

However, more importantly, in the natural gas industry, maintaining system supply reliability refers to maintaining capacity and gas supply resource portfolios adequate to provide for the delivery of gas supplies sufficient to meet the gas supply requirements of an NGDCs customers. An NGDC cannot meet the gas supply requirements of its customers without adequate capacity and gas supply resource portfolios. Of the approximately 40 NGDC capacity and gas supply resource portfolios I have reviewed for reasonableness, a number of those portfolios include on-system LNG, which as explained previously, is both a capacity and gas supply resource. DEU's proposed on-system LNG facility would serve only as a back-up gas supply resource. The Company would not be relying on the LNG facility as a capacity resource available to meet design day demands. Of those 40 NGDC resource portfolios I have reviewed, none of those NGDCs operate and maintain an on-system LNG facility solely to serve as a back-up gas supply resource. Those NGDCs rely on LNG as both primary capacity and gas supply resources. If DEU were going to similarly

[1] EIA, Annual company-level supply and disposition data for all natural gas local distribution companies in the United States, September 29, 2017, https://www.eia.gov/naturalgas/ngqs/#?year1=2013&year2=2016&company=Name

also rely on LNG as a capacity resource, the LNG facility would reduce the amount of interstate pipeline capacity the Company would be required to maintain and would reduce DEU's capacity costs accordingly. This would significantly change the economics of DEU's proposal.

DEU has presented evidence of only one NGDC constructing an on-system LNG facility to serve as a back-up gas supply resource - Southwest Gas Company. Based on my experience, DEU's proposal to construct an on-system LNG facility to serve as a back-up gas supply resource is inconsistent with observed industry practices.

Q. DO YOU HAVE OTHER OBSERVATIONS CONCERNING THE AGA SURVEY INITIATED BY DEU?

A. Yes. Of the four NGDCs reporting a supply disruption that resulted in the failure to deliver gas supplies to their customers (outages), none of the supply disruptions were the result of well freeze-offs. Each outage was attributable to transmission or distribution system equipment failures or damage. It is uncertain whether DEU's proposed LNG facility could prevent an outage due to similar transmission or distribution system failures on DEU or the interstate pipelines delivering gas to DEU. What is certain is that the potential exists for equipment failures to occur that would result in the loss of service to customers that could not be prevented by the proposed LNG facility. This would include failures due to line damage from third-parties, landslides, earthquakes, forest fires, floods, washouts, and cyber-attacks. By design, the LNG facility would also not be able to address a supply disruption of more than 150,000 Dth/day.

Q. IN THE TESTIMONY PRESENTED BY DEU, IS THERE ANY INDICATION THAT A GAS SUPPLY DISRUPTION MIGHT BE

MANAGED SUCCESSFULLY BY DEU WITHOUT THE USE OF AN LNG FACILITY?

A. Yes. In DEU's technical conference slide presentation, Slide 11, DEU presents a summary indicating that it experienced supply disruptions on 92 occasions during a recent 7-year period. There were various different reasons for the occurrence of the supply disruptions, but in each instance, DEU and the systems that support the delivery of gas supplies to DEU were able to respond in a way that avoided any outage. This is consistent with similar experiences occurring with other pipelines and NGDCs throughout the industry.

Q. WHAT ABOUT DEU'S EXPERIENCE WITH ACTUAL OUTAGES?

A. In response to DPU data request 1.12, DEU summarizes instances of actual outages on the DEU system within the recollection of current personnel. A total of five instances of outage are noted. In response to OCS data request 2.17 DEU indicates that four of those five instances of outage occurred outside of the Wasatch Front distribution system and were unique to small communities where there was only one gas supply feed into that community. As to all five instances of outages that DEU has experienced, DEU has acknowledged that an LNG facility as proposed in this docket would not have prevented such an outage, nor would it offer an immediate cure for such an outage.

Q. HAVE THERE BEEN MORE RECENT SUPPLY DISRUPTIONS DUE TO WELL FREEZE-OFFS SINCE THE 2011 INCIDENT AFFECTING CUSTOMERS IN NEW MEXICO AND ARIZONA IDENTIFIED BY DEU?

A. Yes. During the 2014 Polar Vortex, well freeze-offs reduced U.S. natural gas production by approximately 5 percent, which at that time established a record.[2] This record was broken this past winter with the 2018 Bomb Cyclone with well freeze-offs

[2] https://www.genscape.com/blog/record_freeze_offs_result_windspeed_winter_weather.

reducing U.S. natural gas production by 7 percent.[3] I am not aware of any significant customer service outages resulting from these well freeze-offs, nor any plans by the affected NGDCs to construct on-system LNG facilities in response to the supply disruptions.

Q. HOW DID THE AFFECTED NGDCS MANAGE THE SUPPLY DISRUPTIONS CAUSED BY THE 2014 AND 2018 WELL FREEZE-OFFS?

A. I am not certain as to how the affected NGDCs managed these supply disruptions, but evidently they were generally successful as I have found no evidence of service outages caused by these well freeze-offs. One of the hardest hit pipelines by the 2018 well freeze-offs was El Paso, and outages on Southwest were avoided without reliance on the LNG facility which is currently under construction. Typically, I would expect unsuccessful efforts to manage supply disruptions to make headlines, while successful efforts would not. Generally I would expect NGDCs to manage supply disruptions by securing alternative supplies, working with their interstate pipeline service provider(s), and voluntary/mandatory usage reductions by customers. I would also note that it appears that DEU has not investigated or presented any evidence in this proceeding as to how other NGDCs managed the 2014 and 2018 supply disruptions.

IV. DEU HAS NOT PROPERLY EVALUATED ALL SUPPLY RELIABILITY SOLUTIONS

Q. DEU HAS EVALUATED SEVERAL ALTERNATIVE RESOURCES TO AN ON-SYSTEM LNG FACILITY TO MANAGE SUPPLY DISRUPTIONS, BUT HAS SELECTED THE LNG FACILITY IN LARGE

[3] *Ibid.*

PART DUE TO CONCERNS WITH RESPECT TO THE RELIANCE ON THIRD-PARTIES TO PROVIDE THE ALTERNATIVE RESOURCE. PLEASE COMMENT ON THIS ASPECT OF THE SELECTION OF THE LNG FACILITY.

A. DEU claims that an advantage of an on-system LNG facility compared to an off-system alternative resource is that the LNG facility is located near the demand center (the DEU system) rather than a significant distance from the demand center, which decreases the risk of supply shortfalls due to earthquakes, landslides, third-party damage and tear-outs, equipment failure, power outages, human error and cyber-attacks. DEU also claims that there are advantages associated with Company owning and operating the LNG facility compared to an off-system alternative which would be owned and operated by an outside entity (DEU response to FDR 1.02).

In response to these claims, I would note that currently, 100 percent of the gas supplies relied upon by DEU to serve its sales customers are sourced from locations at significant distances from the DEU system and delivered by utilizing facilities owned and operated by third-parties. This reliance on third-parties has not had a negative impact on service reliability.

Q. THE COMPANY CLAIMS THAT SEVERAL OF THE ALTERNATIVES TO THE PROPOSED LNG FACILITY WOULD REQUIRE THE ACQUISITION AND USE OF INCREMENTAL UPSTREAM TRANSPORTATION CAPACITY. PLEASE COMMENT ON THESE CLAIMS.

A. Included in the DEU cost estimates for several alternatives are the costs associated with acquiring additional firm upstream transportation capacity to deliver the alternative supplies to DEU, or the construction of new transmission facilities to deliver the

alternative supplies to DEU. If a supply disruption at the supply source were to occur on a design day, the firm transportation capacity initially being used to deliver those supplies would be available to deliver the alternative supplies, and the acquisition of additional firm transportation capacity or the construction of new facilities may not be necessary.

Q. HAS DEU EVALUATED THE USE OF EXISTING CAPACITY TO DELIVER ALTERNATIVE SUPPLIES?

A. Not really. In OCS data request 1.05, the Company was asked about the use of existing capacity to deliver alternative supplies in the event of a supply disruption. In its Highly Confidential response, the Company indicated that if capacity was made available due to a supply disruption, the capacity would need to be rescheduled for the next NAESB cycle which would likely be the intraday 2 cycle. Under these circumstances, the alternative supplies would not flow until 5 PM, and that this would be too late.

Q. WHAT IS YOUR RESPONSE TO THE COMPANY'S CLAIM?

A. In the response to OCS data request 2.03, DEU indicated that in the past, there have been times when the upstream delivering pipeline has allowed nomination changes to flow earlier than provided for under the NAESB nomination and delivery time lines. While DEU's upstream pipeline service providers are not currently required to allow nomination changes to flow early under their FERC-approved tariffs, DEU could pursue the establishment of such a service with its upstream pipeline service providers. Until recently, DEU's upstream interstate pipeline service providers did not offer peak hour services; however, due to the requirements and needs of their customers, such services are now offered by DEU's upstream pipelines.

Q. COULD THE NO-NOTICE TRANSPORTATION ("NNT") SERVICE DEU CURRENTLY PURCHASES FROM DOMINION ENERGY QUESTAR

PIPELINE ("DEQP") SERVE AS AN ALTERNATIVE TO THE PROPOSED LNG FACILITY?

A. According to information provided in response to OCS data request 2.10, the Company has subscribed to 203,542 Dth/day of NNT service from DEQP, its principal upstream pipeline service provider. NNT service is provided as a firm "on-demand" transportation service for any nominations that fall within the Company's Rate Schedule T-1 firm transportation contract demand, and allows DEU to take delivery of gas supplies in excess of daily nominations. Thus, it appears that NNT service is available to address supply disruptions of up to 203,542 Dth/day which exceeds the 150,000 Dth/day capability of the proposed LNG facility. The DEQP's NNT service also allows DEU to take up to 203,542 Dth on a particular day in excess of its total Rate Schedule T-1 contract quantity so long as pipeline capacity is available and if pipeline system integrity is not jeopardized. Such service in excess of Rate Schedule T-1 nominated firm contract demand would be provided on an interruptible basis and could fully utilize alternate receipt and delivery points under the terms of the tariff.

V. DEU'S CURRENT SYSTEM IS VERY RESILIENT

Q. HAVE YOU EXAMINED ATTRIBUTES OF FACILITIES AND SYSTEMS THAT SUPPORT THE DELIVERY OF GAS SUPPLIES TO DEU TO DETERMINE WHETHER THEY ARE ROBUST ENOUGH FOR DEU TO RELY UPON?

A. Yes.

Q. HAVE YOU HAD AN OPPORTUNITY TO REVIEW MAPS SHOWING THE DEU DISTRIBUTION SYSTEM AS WELL AS MAPS SHOWING THE UPSTREAM PIPELINE FACILITIES THAT SUPPORT THE GAS

SUPPLY DELIVERY CHAIN THAT IS USED TO ENSURE THE DELIVERY OF GAS SUPPLIES TO DEU'S WASATCH FRONT DISTRIBUTION SYSTEM?

A. Yes. The DEU system map that was provided in response to OCS date request 1.02 as well as the DEQP system map provided in response to OCS data request 2.13 were very helpful in identifying these facilities.

Q. WITH RESPECT TO THE INTERCONNECTED INTERSTATE PIPELINES THAT TRANSPORT GAS SUPPLIES TO THE DEU WASATCH FRONT DISTRIBUTION SYSTEM, WERE YOU ABLE TO DETERMINE THE NUMBER OF GATE STATIONS OR INTERCONNECTIONS THAT FEED THE DEU WASATCH FRONT SYSTEM?

A. Yes. In addition to the maps, I reviewed the response to OCS data request 2.18, and found that the DEU Wasatch Front distribution system is supplied by nine different gate stations (excluding smaller stations and farm taps) which are operated by two different pipeline entities – Kern River Gas Transmission ("Kern River") and DEQP. A review of the DEQP system map shows that DEQP's system has two different significant segments that access different upstream pipelines and gas supplies. These two essentially separate pipeline systems interconnect with DEU's Wasatch Front system, with the southern system providing supplies at the Payson Gate while four other gate stations are supplied by DEQP's northern system. In addition, the Kern River system is interconnected with DEU's Wasatch Front Distribution system via four gate stations

Q. HAVE YOU ALSO REVIEWED THE AVAILABILITY OF GAS SUPPLIES HELD IN STORAGE FACILITIES THAT ARE

INTERCONNECTED TO THE UPSTREAM PIPELINES CONNECTED TO DEU'S SYSTEM?

A. Yes. According to information shown in the map that was provide in response to OCS data request 1.02 and the information provided in response to OCS data request 2.12 concerning gas supply contracts, DEU is interconnected with and has contracted for gas storage at five different gas storage locations, all interconnected with the DEQP system. One of those storage facilities, Clay Basin, can provide gas supplies to both the northern and southern segments of DEQP. The other four storage facilities feed the northern portion of the DEQP system.

Q. HAVE YOU BEEN ABLE TO DETERMINE THE NUMBER OF PROCESSING PLANTS THAT DEU IS RELYING UPON FOR THE PROVISION OF GAS SUPPLIES INTO THE UPSTREAM PIPELINES THAT PROVIDE THE TRANSPORTATION OF GAS SUPPLIES TO DEU'S WASATCH FRONT SYSTEM?

A. Yes. With respect to purchased gas supplies, the information provided by DEU in response to OCS data request 2.02 indicates that gas supplies are purchased at the outlet of 10 different processing plants. Eight of those are connected to the DEQP system and two of those plants are connected to Kern River.

Q. WHAT ABOUT WEXPRO COST-OF-SERVICE GAS SUPPLIES? ARE THOSE GAS SUPPLIES ALSO SECURED THROUGH PROCESSING PLANTS?

A. Yes. DEU indicated that much of the Wexpro cost-of-service supplied gas is also processed in gas processing plants (see DEU response to OCS data request 2.02). Three of those plants are the same plants used for third party purchases of gas supply, as noted

above. Other Wexpro gas supplies are processed through three additional gas processing plants

Q. HAVE YOU LOOKED AT THE NUMBER OF ADDITIONAL PIPELINES THAT ARE INTERCONNECTED WITH KERN RIVER AND DEQP AS SEPARATE FEEDER PIPELINES THAT FURTHER UPSTREAM ACCESS TO GAS SUPPLIES RELIED UPON BY DEU?

A. Yes. In response to OCS data request 2.06, DEU indicated that DEQP is interconnected with and receives gas to be transported on its pipeline system from the following interstate pipelines during the winter season: Colorado Interstate Gas Co, Dominion Energy Overthrust Pipeline, Kern River, Northwest Pipeline, Southern Star Central Gas Pipeline, and White River Hub.

Q. WITH RESPECT TO GAS SUPPLIES PURCHASED FROM THIRD PARTIES, HAVE YOU REVIEWED THE NUMBER OF DIFFERENT SOURCES FROM WHICH SUCH GAS SUPPLIES MIGHT BE OBTAINED?

A. It is difficult to determine the various sources from which the purchased gas supplies have come. DEU did indicate that in the winter of 2017-18 such purchased supplies were acquired pursuant to 13 different gas supply contracts where deliveries were made into the DEQP system and pursuant to five different gas supply contracts where deliveries were made into the Kern River system, for a total of 18 different gas supply contracts (DEU response Attachment 1 to OCS data request 2.01).

Q. WITH RESPECT TO GAS PRODUCED AND SUPPLIED UNDER THE WEXPRO AGREEMENT, HAVE YOU REVIEWED THE NUMBER OF DIFFERENT FIELDS OR GAS SUPPLY BASINS THAT ARE PART OF

THE NETWORK THAT IS SUPPLYING WEXPRO COST-OF-SERVICE GAS TO THE DEU SYSTEM?

A. Yes. In response to OCS data request 2.18, DEU provided a list of the different fields in the Green River and Uinta Basins from which the Wexpro cost-of-service gas is produced. There are a total of 34 different producing fields that supply Wexpro cost-of-service gas. Some of those gas supplies are transported through Northwest Pipeline and Colorado Interstate Gas as upstream pipelines. Those gas supplies as well as other Wexpro gas are transported through Kern River and DEQP in bringing the gas produced from those 34 different producing fields to the Wasatch Front for distribution.

Q. DO YOU HAVE AN IDEA OF HOW MANY DIFFERENT WELLS MIGHT BE SUPPORTING THIS VAST NETWORK OF UPSTREAM NATURAL GAS DELIVERY FACILITIES?

A. That specific information was not provided. However, extrapolating from the information provided, it is easy to assume that the number of wells that are operating to bring gas supplies to DEU for distribution in its Wasatch Front distribution system are in the hundreds.

Q. WITH SUCH REDUNDANCY IN GAS SUPPLIES, HOW DO YOU RESPOND TO DEU'S CONCERNS REGARDING WELL FREEZE-OFFS?

A. I am somewhat skeptical of DEU's use of well freeze-offs as a justification for an LNG plant. The information that was provided by DEU in slide 11 of its Tech Conference presentation shows that of the 92 different gas supply shortfalls that were noted over a recent 7-year period in support of that slide, none of the gas supply shortfalls resulted in a gas supply outage. There is significant redundancy in the hundreds of wells that contribute to DEU's gas supply. Such wells are located in at least 34 gas different gas producing fields that are tied to DEU's gas supply system. Diversity in gas supplies

can also be seen in the 18 or more points where natural gas supplies being purchased by DEU which are then delivered through various upstream interconnected interstate pipelines which then connect through essentially three different pipeline systems that provide gas supplies to nine different gate stations to support the gas supplies needs of the Wasatch Front. In addition, DEU has secured storage gas for delivery to its system through five different storage facilities, all suggesting that DEU's existing gas supply infrastructure is sufficient to meet the design day and other day demands of the Wasatch Front distribution system with sufficient reliability. Opportunities to address emergency nominating situations are also available to DEU without being constrained by the NAESB nominating cycles with the use of the "on demand" nominations that are available to DEU through the use of NNT service that has been subscribed to with DEQP.

VI. LNG FACILITY COST RECOVERY

Q. HOW IS DEU PROPOSING TO RECOVER THE COSTS ASSOCIATED WITH THE LNG FACILITY?

A. DEU is proposing to recover the costs associated with the LNG facility through the base rates of sales customers.

Q. IS DEU'S COST RECOVERY PROPOSAL REASONABLE?

A. No. As indicated previously, the design day demand of firm transportation customers is forecasted to be 463,000 Dth for the winter of 2022-2023 when the LNG facility is anticipated to be placed in service. If DEU experiences a supply disruption on a design day that leads to customer outages, it is highly likely that firm transportation customers will also experience outages (DEU response to OCS data request 2.23, attached). If an LNG plant prevents an outage, firm transportation customers would also continue to

take service and service would not be curtailed. In addition, to provide service to firm transportation customers that experience a supply disruption on a design day, DEU may rely on the proposed LNG facility (such as for service to sensitive transportation customers such as schools, hospitals, etc). Therefore, firm transportation customers could benefit from the LNG facility if it is approved and should contribute to the recovery of costs associated with the facility.

VII. CONCLUSIONS AND RECOMMENDATIONS

Q. SHOULD DEU'S DECISION TO CONSTRUCT AN ON-SYSTEM LNG FACILITY BE APPROVED BY THE COMMISSION IN THIS PROCEEDING?

A. No. A number of major supply disruptions have been experienced in the U.S. since 2011. These supply disruptions have been successfully managed by the affected NGDCs without the use of an LNG facility that provided for a supply back-up service. In response to these supply disruptions, with one exception that I am aware, NGDCs have not proposed the construction of on-system LNG facilities. DEU has not presented evidence that it analyzed or evaluated the procedures used by other NGDCs to successfully manage supply disruptions. Therefore, DEU has not met its burden of proof that the proposed LNG facility is the lowest cost alternative to meet potential future supply disruptions. The Commission should require DEU to present significantly more evidence as to how successful supply disruption management practices employed by other NGDCs are not equally capable at being employed by DEU, and require DEU to more fully examine the use of its existing firm transportation capacity to deliver back-up supplies or the use of NNT service before requiring sales

customers to potentially pay more than a $1 billion dollars to address a supply disruption with a very low probability of ever occurring.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.