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

REBUTTAL TESTIMONY OF MICHAEL L. GILL
FOR DOMINION ENERGY UTAH

September 6, 2018

DEU Exhibit 5.0R
Q. Please state your name and business address.
A. My name is Michael L. Gill. My business address 1140 West 200 South, Salt Lake City, UT 84104.

Q. Are you the same Michael Gill that filed Direct Testimony in this proceeding?
A. Yes, I am.

Q. What is the purpose of your rebuttal testimony?
A. I rebut portions of the direct testimonies of Mr. Neale, Mr. Vastag, and Mr. Holder. I also offer clarifying and corrective information and explain why the proposed LNG facility is a safe option for supply reliability. Finally, I discuss Dominion Energy Utah’s (DEU or Company) concerns regarding the viability of the Magnum Energy Midstream Holdings, LLC (Magnum) proposals.

Q. Are there errors in your previous testimony that you would like to correct?
A. Yes. In DEU Exhibit 5.0, Page 4, Lines 100 to 102, I incorrectly indicated that it would take approximately 180 days to fill the proposed 15 million gallon LNG storage tank from empty. The correct number of days to refill the LNG tank from empty should have been approximately 150 days, based on a design-liquefaction rate of approximately 8.2 MMcf/d (100,000 gpd).

Q. At lines 504-505 of his prefilled Direct Testimony, Mr. Neale indicates: “[T]he Proposed LNG Facility will receive methane natural gas via interconnection with an interstate pipeline....” Is this correct?
A. No. While it is true the natural gas used in the process will be transported to DEU’s system via interstate pipeline, the interconnection of the LNG plant will be a direct interconnection to DEU’s distribution system. The proposed interconnect pipeline would require the construction of about one mile of 14” diameter steel pipe. This pipeline would tie to an existing DEU Feeder Line.
Q. In lines 525-580 and 668-687 of his prefiled testimony Mr. Neale discusses the “fuel loss” associated with the LNG facility processes. Does Mr. Neale make the proper assumptions regarding “fuel loss” in the cost of operating the LNG plant?

A. Not entirely. Mr. Neale correctly states that fuel used in the processing LNG – both during the liquefaction stage and during the vaporization stage – adds to the cost of the final product. However, that cost has already been accounted for in the Company’s financial analysis. In addition, Mr. Neale incorrectly assumes that fuel gas will be used during the compression processes during liquefaction. The preliminary design for the facility specifies the use of electric motor driven compression. Again, the fuel gas and electric costs have been captured in DEU’s financial analysis.

Q. Mr. Neale assumes a “5% fuel loss” as the base operating conditions for the LNG facility. Is this an accurate assumption?

A. No, this is an overestimation of the fuel loss due in large part to Mr. Neale’s incorrect assumption that compression is gas-driven. Fuel-gas usage is significantly lower with the electric motor driven compressor design. DEU’s consultant, HDR, Inc. (HDR) estimates fuel gas consumption of approximately 0.211 MMscfd during the liquefaction process and approximately 1.5 to 3 MMscf<l during the vaporization process. This is well below the 5% fuel loss estimate assumed by Mr. Neale.

Additionally the term ‘fuel loss’ is misleading. While fuel gas is used in the LNG liquefaction and vaporization processes as described above, boil-off gas from the tank is compressed and injected into the pipeline and is, therefore, not lost.

Q. In Mr. Neale’s testimony, he includes an in-depth discussion of the effects of ambient temperature on the LNG process. On line 666 of his testimony, Mr. Neale concludes that the effect on ambient conditions relative to fuel loss across the facility process could be considered de minimus. Is this accurate?

A. Yes, I agree with Mr. Neale’s conclusion. The ambient temperature at the site will have minimal impact on the fuel gas usage of the LNG facility.

Q. In lines 1309-1310 of his Direct Testimony, Mr. Neale states, “Therefore, I find that service to remote communities should not be expressly provided as a non-cost
criterion used in the evaluation of the Proposed LNG Facility in this docket”. Do you agree with this recommendation?

A. Not entirely. While it is true that all of the specifics regarding service to remote communities are not known at this time, this does not diminish the fact that the proposed LNG facility will be capable of providing service to remote communities in the future. DEU agrees that the primary purpose of the facility will be to provide supply reliability to the Wasatch Front. However, the potential to serve these remote communities with this plant in the future should not be ignored.

Q. In lines 261-263 of his Direct Testimony, Mr. Vastag states, “It is conceivable that a not-in-my-backyard (nimby) movement could prevent the construction or operation of the plant. DEU has not provided evidence that is has done adequate work with local residents or officials to have confidence that this project will move forward without opposition”. Is this an accurate statement?

A. No, this is not an accurate statement. As stated in the Company’s response to OCS 4.02, DEU has gone to great lengths to minimize potential NIMBY opposition. DEU has obtained land rights for 160 acre parcel located near Magna, Utah. This site is located in a heavy industrial area that is bordered on the west [redacted], on the north side by [redacted], and on the south by [redacted]. There is only one single family residence located approximately a half-mile to the south of the southwest corner of the property. Not only will the large parcel allow DEU to meet code-mandated distances for plant operation, but it will minimize noise levels or other concerns at adjacent properties.

In addition to selecting an isolated location, DEU has been working with the Salt Lake County Planning and Zoning Department and the Salt Lake County Fire Marshal to ensure that development of the LNG facility will be allowed. DEU has not received any meaningful opposition from these entities regarding construction of the facility.

DEU has been working with HDR to develop a public awareness plan to help answer any questions that may arise during the conditional use permitting process required by Salt Lake County.
DEU has commenced planning of the proposed facility with community concerns in mind, and has taken steps to minimize the NIMBY opposition referenced by Mr. Vastag. Finally, Mr. Vastag has not identified a single actual objector to the facility's construction. As such, his concern is purely hypothetical, and therefore, not a legitimate basis for objecting to the facility.

Q. At page 10, lines 184-188 of his Direct Testimony, Mr. Holder states, “The Magnum options can be brought online sooner than an LNG option. Permitting for the Magnum project is complete and certain, while permitting is just getting underway for the LNG project”. Is this an accurate statement?

A. No. Mangum Energy Midstream Holdings LLC (Magnum) does not provide evidence that permitting for the project is complete, nor has it provided evidence that the Magnum options can be brought online sooner. While Magnum may have FERC approval to build up to a 36” diameter line to Goshen, it has not secured all the land rights necessary to construct this line. A copy of this data request response is attached as DEU Highly Confidential Exhibit 5.09R. Additionally Magnum does not have permits to construct a pipeline beyond Goshen to a delivery point on the DEU system. The proposed pipeline extensions, either to __________, and the interconnect facilities will require significant additional permitting. Any pipeline extension will require a specific pipeline alignment and the acquisition of rights-of-way and/or easements for the pipeline construction. Either of those potential routes, and the facilities required for the pipe to interconnect with DEU’s system, will likely require significant permitting from FERC, federal agencies, and state and local permitting entities.

Based upon Magnum’s testimony and responses to data requests in this matter, Magnum apparently has not yet begun the permitting process for any proposed pipeline extension beyond Goshen, and, in fact, has not even commenced the necessary engineering studies,
analysis and drawings needed for that permitting process to be started. Additionally, permitting requirements for these facilities will be specific to the location and zoning of property. It is not possible to start permitting for the end facilities or pipeline construction until a pipeline alignment is clearly determined. Magnum has not yet selected a site for interconnecting with the Company facilities. Locations for either of these extensions have yet to be specifically identified, and property has not been acquired. In the face of all of this needed work, it is not accurate for Magnum to claim its project is “shovel ready” as Mr. Holder asserts.

Q. Please describe DEU’s experience building large diameter high pressure pipelines. What are the approximate timelines you have seen for the design, procurement, permitting and construction of pipelines similar to the proposed Magnum extensions beyond Goshen?

A. The Company annually constructs large diameter pipeline projects as part of its Feeder Line Replacement program. These projects are typically within heavily populated areas not unlike portions of the Magnum proposals. Due to this complexity, the design, procurement, property rights acquisition (i.e. easements or permits), and construction could take 4-5 years for a project of similar length as the Magnum proposals.

While it is true that large portions of the Magnum proposed pipeline extensions beyond Goshen are in open areas that does not mean they are without complexity. Below I give examples of the types of items Magnum would need to consider in its pipeline projects. Many of these items could, and often do, take substantial time to review and complete. (i.e. federal permitting, material procurement, property rights acquisition, and environmental reviews to name a few).

Q. How does Magnum’s project status compare with that of DEU’s proposed LNG Facility?

A. DEU has made significant progress on the necessary site evaluations and engineering to permit and site the proposed LNG facility. DEU retained HDR to perform several studies and evaluations on the LNG plant engineering and permitting requirements. DEU has precisely determined the location and extents of the LNG facility and secured the land
rights for the project. Additionally, HDR has completed site evaluations and FEED (Front End Engineering and Design) studies for the project. These studies include very detailed information on the engineering requirements for the LNG storage project as well as a detailed permit matrix that identifies that status of required permits for the project.

To date, the proposed site has been cleared for impacts to wetlands, threatened and endangered species, and cultural resources. Additionally, DEU has performed Phase I and Phase II environmental assessments on the property, and the property has been cleared for purchase and construction by Dominion Energy’s environmental department.

Representatives from DEU have met with permitting departments for the State of Utah Department of Environmental Quality, the local Planning and Zoning Department, and the local Fire Marshall to discuss in detail future permitting requirements. Based on these meetings and conversations, it does not appear that obtaining future permits will be a lengthy or difficult process. DEU is confident it will be able to meet the 2022 in-service date of the LNG facility to be operational.

Q. **What timeline could be expected on the design, permitting and construction phases of Magnum’s proposals?**

A. As stated above, based on experience with similar projects, the pipeline project timeline could be 4 to 5 years. In addition, DEU has recently designed, permitted and constructed a large tap facility (Hunter Tap) to interconnect with Kern River Gas Transmission Company (KRGT) and is currently in the process of designing another in North Salt Lake. The planning, permitting and construction of the Hunter Tap project took approximately 36 months to complete. Likewise it is anticipated that 31 months will be needed to design, permit and construct the North Salt Lake project. I would expect it to take at least that long for Magnum to design and permit the required interconnect facilities.

Q. **Do you have any other reasons to believe that Magnum has not yet undertaken due diligence sufficient to provide accurate cost information, or reassurance that it can actually construct the projects it has proposed?**
A. Yes. In order to design a pipeline extending past Goshen, Magnum will have to consider the following items (among other things):

- Will in-line inspection (i.e. "smart" pigging for integrity assessments) facilities be needed? If yes, where will those facilities be located and what property requirements exist for those locations?
- Where will block valves be positioned? What are the property requirements?
- Are there river, creek, or drainage crossings that will require special environmental permits?
- Are there canal crossings that will require special permits?
- Are there permits that will require review and approval from federal agencies?
- Are there endangered species or culturally sensitive areas along the proposed pipeline route?
- Are there fault crossings that require special design treatment?
- Are there landslides or unstable soils that the pipeline must cross?
- Are there delineated wetlands along the route?
- What is the ground water level? Will special geotechnical work be required?
- Is there potential for induced alternate current (AC) corrosion along the pipeline corridor?
- What are the traffic control considerations?
- Are there work timing considerations for road work or wildlife issues?
- What are the restoration requirements?
- Are conditional use permits required for above ground facilities?

Despite many meetings, discussions, and requests for information, Magnum has not yet provided evidence that would indicate or show that Magnum has analyzed any of the items on the list above.
At page 10, lines 189-191 of his Direct Testimony, Mr. Holder states, “A Magnum Firm Storage Service (FSS) agreement entails no risk of cost overruns”. Is this an accurate statement?

A. No. As mentioned above, it does not appear that Magnum has performed the necessary engineering due diligence on which to base its proposals. In fact, its price proposals actually decrease in price, the farther the proposed delivery point is from its storage caverns. A longer pipeline constructed for less cost makes no sense. The Company also has serious concerns that Mangum may not be in service in a timely fashion, and that there is a significant risk that the actual construction costs of any of the Magnum storage options that require a pipeline extension beyond Goshen could be much higher than that the estimated costs used to develop Magnum’s business proposals. While it is true, that Magnum says it would bear these risks, it would not be wise for DEU to enter into a contract with an entity where the economic viability of the project – once construction costs are finalized – is questionable. The Company simply cannot give serious credence or rely upon a project that is only conceptual, and not proven to be feasible.

At page 10, lines 192-199 of his Direct Testimony, Mr. Holder states “The Magnum options present lower safety risks”. Is this an accurate statement?

A. No, Mr. Holder is not correct. Creating LNG is a very safe process. The gas processing, compression and refrigeration cycles at LNG facilities use proven technologies that have been safely utilized in the United States since the 1960’s. As Mr. Paskett more fully describes in his rebuttal testimony, LNG facilities have a strong safety record, particularly when compared with transmission pipelines. The claim that piping and storing gas is inherently safer than creating LNG is a false and unsupported claim. This is particularly true within heavily populated areas like the Wasatch Front where third-party damage and interference to cathodic protection systems are the substantial risks to any pipeline system. Specifically, regarding the proposed LNG facility, the overall site, including the processing and storage areas, have been preliminarily designed to be in full

1 Other risks to pipelines are listed in Dominion Energy Exhibit 2.12 – Supply Reliability Risk.
compliance with stringent federal regulations (CFR49-Part 193 and NFPA 59A),
designed to ensure the safety of such facilities.

Q. At page 10, lines 194-195, Mr. Holder states, “LNG facilities built in densely-
populated Salt Lake County... are also more vulnerable to earthquakes”. Is this an
accurate statement?

A. No. Any facility, located along the Wasatch Front would be vulnerable to earthquakes,
including an LNG facility or a pipeline like those proposed by Magnum. The challenge
is correctly designing your facilities or pipeline to withstand the anticipated ground
movement. The proposed LNG facility has been designed to withstand anticipated earth
movement caused by a large earthquake. This includes deep pile foundations to
withstand potential earth movement, particularly shifting soils. In addition, DEU has
expertise (both inside the Company and through its engineering consultants) in the design
of earthquake resistant trenching and connections.

By contrast, any proposed Magnum storage facility and associated pipelines and
interconnect facilities that tie into DEU’s Wasatch Front system would be subject to
earthquake risks similar to the proposed LNG facility. While Magnum may or may not
have the expertise to design for such risks, Magnum has provided no engineering studies
for these proposed facilities that indicate that Magnum has designed its facilities to
withstand earthquake risks.

Q. At page 10, lines 195-199 of his Direct Testimony, Mr. Holder states, “Operations of
the Magnum facilities is inexpensive and simple-involving standard compression
and pipeline equipment-compared to complex LNG operations, which involve front-
end scrubbing, equipment rotation, refrigeration compression, pumps, cooling,
vaporization, and tail gas treatment”. Is this an accurate statement?

A. No. The operations of an LNG facility of this size are not complex. The compression
located at the proposed LNG facility would be no different than compression required at
the Magnum facilities. The gas pre-treatment utilizes an amine system, therefore there is
no "tail gas"\(^2\) associated with the process. The vaporization process utilizes in-tank pumps and heat exchangers that are safe and simple to operate. The operational complexity of the LNG facility of this size is reasonably equivalent with the operations of large underground storage facilities.

Q. At page 16, line 313 of his Direct Testimony, Mr. Holder states, "...DEU has never constructed or operated an LNG facility." Is this a true statement?

A. DEU affiliates have a wealth of experience in design, construction, commissioning, operations and maintenance of LNG facilities. Dominion Energy Inc. owns and operates one of the largest LNG import/export facilities in the country in Cove Point, Maryland. The Dominion Energy Cove Point project team has been heavily involved with the LNG project proposed in this docket, and DEU will continue to benefit from this shared knowledge as it develops standard practices, reviews construction plans, trains its personnel and commissions and operates the plant. Additionally, if this project is approved DEU will likely hire HDR to act as “Owner’s Engineer” to help facilitate the execution of the EPC (Engineering, Procurement and Construct) contracts. This will include design and contractor oversight, and assistance with the final permitting and commissioning of the project.

Q. Does Magnum have a similar base of experience for the development of natural gas storage, or for the construction and operations FERC regulated pipelines and facilities?

A. No. Mr. Holder himself says, “It is true that Magnum has not yet constructed or operated the pipeline header for which it holds a FERC certificate, or natural gas cavern.” (Prefiled Direct Testimony of Kevin B. Holder, Lines 311 and 312).

Q. What sorts of risks are associated with the services proposed by Magnum?

A. There are many risks associated with operating extensive pipeline systems. As mentioned briefly above, and more fully in Mr. Paskett’s rebuttal testimony, there have

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2 Tail Gas refers to the gas created during the regeneration cycle of a mol-sieve treatment process.
been several incidents on pipelines systems across the country that PHMSA has regarded as serious.3

Q. At page 19, line 376-377 of his testimony, Mr. Holder states, “Magnum will be an “on-system” storage facility tied directly into the distribution system that can deliver at the required pressure.” Is this a true statement?

A. No, Magnum is not an on-system solution. Interconnecting with Magnum would be no different than other interconnects DEU has with other interstate pipeline companies. With such interconnects, gas is sourced at remote location and transported over dozens or hundreds of miles of interstate pipelines before entering the DEU distribution system. This makes them much more vulnerable to risks that could disrupt service.

Q. Does this conclude your testimony?

A. Yes.

3 PHMSA defines a serious incident as an incident that involves a fatality or injury requiring in-patient hospitalization.
I, Michael Gill, 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.

Michael Gill

SUBSCRIBED AND SWORN TO this 6th day of September, 2018.

Ginger Johnson
Notary Public State of Utah
My Commission Expires on:
August 4, 2019
Comm. Number: 684539