

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

1 **Q. Please state your name and business address.**

2 A. My name is Michael L. Gill. My business address 1140 West 200 South, Salt Lake City,
3 UT 84104.

4 **Q. Are you the same Michael Gill that filed Direct Testimony in this proceeding?**

5 A. Yes, I am.

6 **Q. What is the purpose of your rebuttal testimony?**

7 A. I rebut portions of the direct testimonies of Mr. Neale, Mr. Vastag, and Mr. Holder. I
8 also offer clarifying and corrective information and explain why the proposed LNG
9 facility is a safe option for supply reliability. Finally, I discuss Dominion Energy Utah's
10 (DEU or Company) concerns regarding the viability of the Magnum Energy Midstream
11 Holdings, LLC (Magnum) proposals.

12 **Q. Are there errors in your previous testimony that you would like to correct?**

13 A. Yes. In DEU Exhibit 5.0, Page 4, Lines 100 to 102, I incorrectly indicated that it would
14 take approximately 180 days to fill the proposed 15 million gallon LNG storage tank
15 from empty. The correct number of days to refill the LNG tank from empty should have
16 been approximately 150 days, based on a design-liquefaction rate of approximately 8.2
17 MMcfd (100,000 gpd).

18 **Q. At lines 504-505 of his prefiled Direct Testimony, Mr. Neale indicates: "[T]he**
19 **Proposed LNG Facility will receive methane natural gas via interconnection with an**
20 **interstate pipeline...." Is this correct?**

21 A. No. While it is true the natural gas used in the process will be transported to DEU's
22 system via interstate pipeline, the interconnection of the LNG plant will be a direct
23 interconnection to DEU's distribution system. The proposed interconnect pipeline would
24 require the construction of about one mile of 14" diameter steel pipe. This pipeline
25 would tie to an existing DEU Feeder Line.

26

27 Q. **In lines 525-580 and 668-687 of his prefiled testimony Mr. Neale discusses the “fuel**
28 **loss” associated with the LNG facility processes. Does Mr. Neale make the proper**
29 **assumptions regarding “fuel loss” in the cost of operating the LNG plant?**

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

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

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

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

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

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

54 Q. **In lines 1309-1310 of his Direct Testimony, Mr. Neale states, “Therefore, I find that**
55 **service to remote communities should not be expressly provided as a non-cost**

56 **criterion used in the evaluation of the Proposed LNG Facility in this docket”. Do**
57 **you agree with this recommendation?**

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

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

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

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

82 DEU has been working with HDR to develop a public awareness plan to help answer any
83 questions that may arise during the conditional use permitting process required by Salt
84 Lake County.

85 DEU has commenced planning of the proposed facility with community concerns in
86 mind, and has taken steps to minimize the NIMBY opposition referenced by Mr. Vastag.
87 Finally, Mr. Vastag has not identified a single actual objector to the facility's
88 construction. As such, his concern is purely hypothetical, and therefore, not a legitimate
89 basis for objecting to the facility.

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

94 A. No. Mangum Energy Midstream Holdings LLC (Magnum) does not provide evidence
95 that permitting for the project is complete, nor has it provided evidence that the Magnum
96 options can be brought online sooner. While Magnum may have FERC approval to build
97 up to a 36" diameter line to Goshen, it has not secured all the land rights necessary to
98 construct this line. [REDACTED]

99 [REDACTED]
100 [REDACTED]

101 [REDACTED] A copy of this data request response
102 is attached as DEU Highly Confidential Exhibit 5.09R. Additionally Magnum does not
103 have permits to construct a pipeline beyond Goshen to a delivery point on the DEU
104 system. The proposed pipeline extensions, either to [REDACTED], and the
105 interconnect facilities will require significant additional permitting. Any pipeline
106 extension will require a specific pipeline alignment and the acquisition of rights-of-way
107 and/or easements for the pipeline construction. Either of those potential routes, and the
108 facilities required for the pipe to interconnect with DEU's system, will likely require
109 significant permitting from FERC, federal agencies, and state and local permitting
110 entities.

111 Based upon Magnum's testimony and responses to data requests in this matter, Magnum
112 apparently has not yet begun the permitting process for any proposed pipeline extension
113 beyond Goshen, and, in fact, has not even commenced the necessary engineering studies,

114 analysis and drawings needed for that permitting process to be started. Additionally,
115 permitting requirements for these facilities will be specific to the location and zoning of
116 property. It is not possible to start permitting for the end facilities or pipeline
117 construction until a pipeline alignment is clearly determined. Magnum has not yet
118 selected a site for interconnecting with the Company facilities. Locations for either of
119 these extensions have yet to be specifically identified, and property has not been
120 acquired. In the face of all of this needed work, it is not accurate for Magnum to claim its
121 project is “shovel ready” as Mr. Holder asserts.

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

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

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

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

139 **A.** DEU has made significant progress on the necessary site evaluations and engineering to
140 permit and site the proposed LNG facility. DEU retained HDR to perform several studies
141 and evaluations on the LNG plant engineering and permitting requirements. DEU has
142 precisely determined the location and extents of the LNG facility and secured the land

143 rights for the project. Additionally, HDR has completed site evaluations and FEED
144 (Front End Engineering and Design) studies for the project. These studies include very
145 detailed information on the engineering requirements for the LNG storage project as well
146 as a detailed permit matrix that identifies that status of required permits for the project.
147 To date, the proposed site has been cleared for impacts to wetlands, threatened and
148 endangered species, and cultural resources. Additionally, DEU has performed Phase I
149 and Phase II environmental assessments on the property, and the property has been
150 cleared for purchase and construction by Dominion Energy's environmental department.
151 Representatives from DEU have met with permitting departments for the State of Utah
152 Department of Environmental Quality, the local Planning and Zoning Department, and
153 the local Fire Marshall to discuss in detail future permitting requirements. Based on
154 these meetings and conversations, it does not appear that obtaining future permits will be
155 a lengthy or difficult process. DEU is confident it will be able to meet the 2022 in-
156 service date of the LNG facility to be operational.

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

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

168 Q. **Do you have any other reasons to believe that Magnum has not yet undertaken due**
169 **diligence sufficient to provide accurate cost information, or reassurance that it can**
170 **actually construct the projects it has proposed?**

171 A. Yes. In order to design a pipeline extending past Goshen, Magnum will have to consider
172 the following items (among other things):

173 • Will in-line inspection (i.e. “smart” pigging for integrity assessments) facilities be
174 needed? If yes, where will those facilities be located and what property
175 requirements exist for those locations?

176 • Where will block valves be positioned? What are the property requirements?

177 • Are there river, creek, or drainage crossings that will require special
178 environmental permits?

179 • Are there canal crossings that will require special permits?

180 • Are there permits that will require review and approval from federal agencies?

181 • Are there endangered species or culturally sensitive areas along the proposed
182 pipeline route?

183 • Are there fault crossings that require special design treatment?

184 • Are there landslides or unstable soils that the pipeline must cross?

185 • Are there delineated wetlands along the route?

186 • What is the ground water level? Will special geotechnical work be required?

187 • Is there potential for induced alternate current (AC) corrosion along the pipeline
188 corridor?

189 • What are the traffic control considerations?

190 • Are there work timing considerations for road work or wildlife issues?

191 • What are the restoration requirements?

192 • Are conditional use permits required for above ground facilities?

193 Despite many meetings, discussions, and requests for information, Magnum has not yet
194 provided evidence that would indicate or show that Magnum has analyzed any of the
195 items on the list above.

196 Q. **At page 10, lines 189-191 of his Direct Testimony, Mr. Holder states, “A Magnum**
197 **Firm Storage Service (FSS) agreement entails no risk of cost overruns”.** **Is this an**
198 **accurate statement?**

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

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

213 A. No, Mr. Holder is not correct. Creating LNG is a very safe process. The gas processing,
214 compression and refrigeration cycles at LNG facilities uses proven technologies that have
215 been safely utilized in the United States since the 1960’s. As Mr. Paskett more fully
216 describes in his rebuttal testimony, LNG facilities have a strong safety record,
217 particularly when compared with transmission pipelines. The claim that piping and
218 storing gas is inherently safer than creating LNG is a false and unsupported claim. This
219 is particularly true within heavily populated areas like the Wasatch Front where third-
220 party damage and interference to cathodic protection systems are the substantial risks¹ to
221 any pipeline system. Specifically, regarding the proposed LNG facility, the overall site,
222 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.

223 compliance with stringent federal regulations (CFR49-Part 193 and NFPA 59A),
224 designed to ensure the safety of such facilities.

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

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

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

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

247 A. No. The operations of an LNG facility of this size are not complex. The compression
248 located at the proposed LNG facility would be no different than compression required at
249 the Magnum facilities. The gas pre-treatment utilizes an amine system, therefore there is

250 no “tail gas”² associated with the process. The vaporization process utilizes in-tank
251 pumps and heat exchangers that are safe and simple to operate. The operational
252 complexity of the LNG facility of this size is reasonably equivalent with the operations of
253 large underground storage facilities.

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

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

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

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

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

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

² Tail Gas refers to the gas created during the regeneration cycle of a mol-sieve treatment process.

276 been several incidents on pipelines systems across the country that PHMSA has regarded
277 as serious³.

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

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

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

287 **A. Yes.**

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

289

State of Utah)

) ss.
County of Salt Lake)

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.

Notary Public