

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 MICHAEL L. PLATT
FOR DOMINION ENERGY UTAH**

April 30, 2018

DEU Exhibit 3.0

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1

I. INTRODUCTION

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

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

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

6 A. I am employed by Dominion Energy Utah (Dominion Energy, DEU, or Company) as the
7 Manager of Engineering Systems. I am responsible for the System Planning and
8 Analysis Group, Records Management, Research and Development, and both High
9 Pressure and Intermediate High Pressure (IHP) geographic information system (GIS)
10 teams. My qualifications are included in DEU Exhibit 3.01.

11 **Q. Have you testified before this Commission before?**

12 A. Yes. I provided testimony in Utah Dockets No. 17-057-09 and 17-057-20. I have also
13 made presentations at technical conferences and Integrated Resource Plan workshops.

14 **Q. Attached to your written testimony are DEU Exhibits 3.01 through 3.07. Were these
15 prepared by you or under your direction?**

16 A. Except as otherwise stated, they were prepared by me or under my direction. Those not
17 prepared by me or under my direction are true and correct copies of the documents they
18 purport to be.

19 **Q. What is the purpose of your direct testimony?**

20 A. The purpose of my direct testimony is to explain the probability that a supply disruption
21 will occur that would impact the Company's ability to maintain safe and reliable service
22 to the Company's firm customers. I will also discuss the consequences of failing to
23 properly plan for such an event by acquiring additional reliability related resources, and
24 the operational advantages of obtaining on-system storage.

25 **II. PROBABILITY OF A SUPPLY DISRUPTION THAT WOULD REQUIRE**
26 **RELIABILITY SOLUTIONS TO ENSURE SAFE AND RELIABLE FIRM SERVICE**

27 **Q. What kind of event would cause a supply disruption sufficiently significant to**
28 **require the Company to turn to additional solutions to maintain safe and reliable**
29 **service?**

30 **A.** There are many events that could pose that risk. The most likely event would be a
31 weather related supply disruption either on a very cold day, or for a prolonged time-
32 period. Ms. Faust indicates that since 2013, the Company has experienced several supply
33 disruptions caused by cold weather. As Ms. Faust testifies, though these colder
34 temperatures were not nearly as cold as would be experienced on a Design Peak Day,
35 natural gas production was disrupted because natural gas wells and/or processing plants
36 did not operate due to freezing temperatures. When the wells stop producing, or the
37 processing plants stop operating, the natural gas cannot travel through the interstate
38 pipeline system to DEU's load center. Fortunately, none of these events occurred at or
39 near Design-Peak Day¹ temperatures. Had the temperatures been closer to Design-Peak
40 Day temperatures, these incidents would likely have affected service to DEU's residential
41 customers. If the production had stopped for a longer period of time, it would have been
42 more difficult, if not impossible, for the Company to continue to make up for the supply
43 shortfalls.

44 Also, like other businesses and government entities with operations along the Wasatch
45 Front, the Company has also been preparing to meet customer demands during and after a
46 natural disaster, such as an earthquake. The Company typically designs pipelines
47 installed across fault lines to withstand the impact of earthquakes. Notwithstanding the
48 design, a major earthquake at any of the fault lines surrounding the DEU load center
49 could damage a pipeline, which would significantly reduce the amount of gas supply
50 being delivered to the DEUWI system.

¹ The Design-Peak Day is a day with a daily mean temperature of -5 degrees Fahrenheit or lower in the Salt Lake Valley.

51 There are many other events that could, and regularly do, disrupt natural gas supplies to
52 local distribution companies like DEU. These scenarios are discussed in greater detail in
53 DEU Exhibit 2.12 – Supply Reliability Risk. These include events such as third-party
54 damage (tear-outs), landslides, fires, flooding and cyber-attacks. Several of these events
55 have actually occurred in recent history and have either disrupted, or threatened to disrupt
56 natural gas service to DEU’s customers. As a result, the Company believes that, as a
57 prudent operator, it has an obligation to plan for and be prepared to respond to these risks.

58 **Q. If these situations have occurred in the past and the Company has been able to**
59 **maintain service, why does DEU need additional supply capability resources?**

60 A. DEU and its customers have been fortunate that the temperatures have not been colder
61 when shortfall events have occurred, and that the supply disruptions have not been
62 prolonged. Other utilities and pipeline companies have not been so lucky. Given the
63 amount of the supply shortfalls in relation to the total system demand and the limited
64 duration of the shortfalls, the Company has been able to withstand the shortfalls with
65 tools currently available to the Company. Had any of these supply disruptions occurred
66 at colder temperatures or for a prolonged period of time, the Company’s customers would
67 have likely lost natural gas service. As Ms. Faust discusses in her testimony, we are
68 aware that other utilities have had this very experience and many of their customers went
69 without natural gas service for days, due to cold weather. DEU seeks to ensure that its
70 customers have safe and reliable service even in the worst conditions, on dangerously
71 cold days. Accordingly, DEU is assessing the system for potential risks and planning to
72 provide reliable service even in the most difficult circumstances.

73 **Q. What are the chances of any of these scenarios actually occurring?**

74 A. In recent history, when the temperatures drop to about 10°F mean in Salt Lake, there are
75 upstream freeze-offs (both at wellheads and at processing plants) due to extremely cold
76 temperatures in the Wyoming gas production area,² where corresponding minimum
77 temperatures reach approximately -15°F mean. The Company currently uses withdrawals
78 from the aquifer facilities to replace disrupted supplies during moderate weather, but

2 Green River, Wyoming

79 when temperatures drop below that approximate 10 degree threshold, the Company needs
80 the aquifer supplies to meet customer demand. DEU Exhibit 3.02 shows the Company's
81 gas supply portfolio. The chart shows the components of the Company's gas supply
82 portfolio, including spot purchases, peaking purchases, baseload purchases, cost-of-
83 service production, withdrawals from Clay Basin, withdrawals from the Ryckman storage
84 facility, and, lastly, withdrawals from Aquifer storage. When temperatures drop further,
85 the Aquifers are no longer available to replace disrupted supplies. When temperatures
86 drop below a 3°F mean, the Company is required to call upon all of its resources
87 described in DEU Exhibit 3.02, and no longer has a back-up resource. Thus, at such a
88 temperature, the Company cannot use any of its supplies to replace supplies disrupted by
89 upstream events. Put otherwise, at extremely cold temperatures, the Company's supply
90 portfolio is fully-utilized, and a supply disruption would result in a supply shortfall and
91 loss of service to customers. I have conducted a temperature probability analysis and
92 determined that the chances of experiencing these temperatures or colder in Salt Lake are
93 approximately once every 14 years. See DEU Exhibit 2.12.

94 **Q. What were the temperatures in Wyoming during the shortfalls the Company**
95 **experienced in recent history?**

96 **A.** The table below shows the mean daily temperatures in Green River, Wyoming during
97 recent shortfall events.

	SLC Average Daily Temperature	Wyoming Average Daily Temperature
12/5/2013	31°F	22°F
1/6/2017	10°F	-11°F
2/20/2018	22°F	0°F

98

99 **Q. Do you account for supply shortfalls in your Design Peak Day unsteady state and**
100 **steady state modeling?**

101 **A.** No. My models assume that all of the supply in the portfolio will show up on an
102 extremely cold winter day. Historically over the last few years, when mean temperatures
103 have reached single digits, there have been supply disruptions upstream. Based on this

104 experience, it is extremely likely that if the Wasatch Front is experiencing a -5°F average
105 day, the temperatures in Wyoming will be considerably colder, and there will be well
106 freeze-offs or equipment failures throughout the production, processing, and gathering
107 systems that DEU relies on to serve its firm sales customers.

108 **Q. What other events result in supply shortfalls on the DEU system?**

109 A. Supply shortfalls can occur and have occurred as a result of landslides, flooding,
110 earthquakes, human error, upstream facility design inadequacies and maintenance, cyber-
111 attacks, and third-party damage to pipelines serving the LDC. Each of these risks is
112 discussed in greater detail in Exhibit 2.12.

113 **Q. Would on-system storage be immediately available at a time of need?**

114 A. Yes. On-system storage would not involve interstate transportation, and would therefore
115 not be constrained by the NAESB-mandated nomination schedule, as discussed in DEU
116 Exhibit 2.12. The Company's Gas Control department could call upon an LNG facility
117 when it was needed. Therefore, on-system solutions are the most reliable way to ensure
118 gas is available even when upstream issues prevent gas supply from reaching the DEUWI
119 system and the Company's firm customers.

120 **III. CONSEQUENCES OF FAILING TO OBTAIN A WORKABLE**
121 **SOLUTION TO THE SUPPLY RELIABILITY RISK**

122 **Q. What consequences do you expect if the Company experiences a supply shortfall**
123 **during a Design-Peak Day?**

124 A. Using a 2017-2018 Design Peak Day model, I calculated that the Company would lose
125 service to up to 650,000 customers if a supply shortfall of 150,000 Dth/day occurred.
126 Even if one assumes the least extreme outcomes from such a shortfall, it is unlikely that
127 this scenario would result in a loss of service to fewer than 130,000 customers as that is
128 approximately the number of residential customers that burn this amount of gas on a
129 Design-Peak Day. DEU Exhibit 3.03 shows the High Pressure (HP) system pressures

130 that would occur, at times throughout the day, if DEU experienced a supply shortfall of
131 150,000 Dth/day on a Design-Peak Day.

132 **Q. How is it possible to lose service to 650,000 customers when only losing about 10%**
133 **of the Design-Peak-Day supply?**

134 A. The progressive loss of pressure and continued lack of supply reduces system capability
135 far more than 10 percent. As the lack of supply persists, the system pressures drop and
136 the amount of line pack drops.

137 The low system pressures result in a capacity reduction at the regulator stations feeding
138 the Intermediate High Pressure (IHP) system of 1.2 Bcf/day. This amount of reduced
139 capacity ultimately results in 650,000 customers losing service.

140 **Q. How did you calculate and determine that the Company would lose service to**
141 **650,000 customers?**

142 A. Calculating the amount of customers impacted in this scenario was a complicated and
143 long process. First, I ran a Design-Peak Day unsteady-state model. At two hours prior to
144 the peak hour, I removed 150,000 Dth/day of supply at the Riverton gate station. Then, I
145 stepped the model through until pressures at a regulator station dropped below 0.00 psig.
146 When unsteady-state model pressures reach zero, the simulation stops. Each time a
147 regulator station dropped below 0.00 psig, I stopped the analysis and re-profiled the
148 demands at these zero pressure locations so that the demand drops to zero before the
149 model crashes. I repeated this process until the model produced complete results.

150 At this point, I exported the model resultant pressures throughout the simulation. I used
151 the pressures to recalculate the capacity at each regulator station. The capacity used in
152 the models is based on a 125 psig inlet. When pressures drop below 125 psig, the
153 resulting regulator capacity also drops. The summation of all regulator station reductions
154 is 1.2 BCF. After recalculating the capacities, I imported them into the corresponding
155 Intermediate High Pressure (IHP) model. Once each IHP model was solved, all locations
156 that were less than 5 psig were considered lost service customers. This analysis resulted
157 in a loss of 650,000 customers.

158 **Q. Would disrupting service to firm industrial customers make up the same amount of**
159 **supply shortfall?**

160 A. Not necessarily. There is no way to know whether or not industrial customers' supplies
161 would be delivered to the system on any given day. In fact, industrial transportation
162 customers' supplies reach the DEU system through the same network of drilling fields,
163 processing plants, and interstate pipelines that the Company's supplies use. It is highly
164 likely that, if the Company's supply is disrupted upstream, transportation customers'
165 supplies will also be disrupted. It is the Company's obligation to maintain safe and
166 reliable service for all of its firm customers even in Design-Peak Day conditions. Larger
167 customers generally have larger pipelines with higher pressures feeding their services.
168 Even if the Company preemptively discontinued service to a select number of industrial,
169 commercial, and residential customers, some customers would still lose service. My Gas
170 Network Analysis shows that the impacts would be most severe for residential customers.

171 **Q. Do you have other concerns about interrupting firm transportation customers to**
172 **solve this problem?**

173 A. Yes. The Company's firm customers presumably pay for firm service because their
174 businesses and processes cannot be interrupted or would incur significant business harm
175 if service were interrupted. If the Company were to confiscate gas from firm
176 transportation service customers to maintain service to firm sales customers, the firm
177 transportation customers could suffer significant property damage and business losses.
178 The loss of natural gas service could result in the loss of heat, hot water, power
179 generation, or industrial process shut-downs. The Company is committed to providing
180 safe and reliable service to firm transportation customers, just as it is committed to
181 provide such service to firm sales customers. Shutting firm customers off when upstream
182 conditions result in a supply shortfall is not consistent with this commitment and the
183 Company therefore opposes interrupting firm industrial customers as the means of
184 addressing supply shortfalls.

185 **Q. If the Company were to select this as a reliability solution, would you have other**
186 **concerns not previously mentioned?**

187 A. Yes. The Company cannot expect a one-for-one replacement by interrupting firm
188 customers due to customer locations. Exhibit 3.04 is a map of large customer locations
189 along the Wasatch Front. One could be tempted to think that these customers are all
190 included in the same system and would have the same impact on overall supply if the
191 Company interrupted their service. The reality is more complicated. These customers all
192 have their gas supply planned at specific gate stations, and changing the demand alters
193 the take-away capacity. Additionally, the Lake Side power plant has feed from two
194 completely separate systems that do not typically flow bi-directionally. These practical
195 issues significantly reduce the predictability and potential value of interrupting firm
196 customers.

197 **Q. Could the Company interrupt service to defined geographic areas of customers**
198 **rather than losing customers at random locations across the system?**

199 A. The Company seeks to maintain safe and reliable service to *all* firm customers and
200 understands it has an obligation to do so. Because DEU is charged with providing safe,
201 reliable service to its customers, the Company would oppose any gas supply plan that
202 includes a plan to disrupt service to firm customers during a cold winter day.

203 Additionally, this approach would not remedy a significant supply shortfall. I conducted
204 analysis and modeling that assumed DEU shed demand from predetermined locations to
205 maintain adequate pressures to the remainder of the system. In order to make up a
206 shortfall of significant magnitude by shutting off specific locations, DEU would need to
207 isolate the entire Summit Wasatch system (which includes the towns of Park City,
208 Coalville, and Heber City) as well as all service in Tooele County, and all service to
209 customers north of Brigham City. It is not reasonable to *plan* to temporarily terminate
210 service to those firm customers in the winter, and to put their health, safety and property
211 at risk.

212 **Q. Why do you think that there could be impacts to the health and safety of your**
213 **customers?**

214 A. When homes lose natural gas, they also lose their internal heat quickly. On a Design-
215 Peak Day, an average sized home, with good insulation and no working heat sources
216 contained within, would reach freezing temperatures within several hours of losing
217 natural gas service. The estimated time needed to restore service to 650,000 customers is
218 about 51 days. This means that without some other heat source, a number of homes will
219 reach freezing temperatures very quickly and could be without heat for that period of
220 time. Because many customers would not have an alternative heat source, their health
221 and safety would be at significant risk.

222

223 **IV. FINANCIAL CONSEQUENCES OF A SUPPLY DISRUPTION**

224 **Q. If the Company were to lose service to 650,000 customers, what would be the cost to**
225 **restore service to those customers?**

226 A. Restoring service to 650,000 customers over a period of approximately 51 days would
227 cost between \$10,450,000 and \$104,600,000. There are two different ways to estimate
228 the restoration costs. The lower limit is calculated by determining the number of internal
229 employees and mutual aid workers necessary to restore service to each customer, and the
230 costs of each individual per day. The higher estimate is an extrapolation of the
231 Company's experience with an outage in Coalville, Utah in 2016. The Coalville event
232 required the Company to reinstate service to approximately 600 customers, and it cost
233 approximately \$100,000. Using that number and extrapolating for a larger number
234 results in the higher cost estimate.

235 **Q. How long will it take the Company to restore service to that many customers?**

236 A. The Company estimates that it could restore service to all 650,000 customers in 51 days.
237 This figure was arrived at by assuming a three-minute shut-off time and 25 minutes to
238 relight each customer. It also assumes 150 Company workers per shift for the first three

239 days, and that when mutual aid from other companies would arrive, we would have an
240 additional 225 workers assisting with re-lighting.

241 **Q. Why would the Company shut off meters before restoring service?**

242 A. When a system loses pressure, pilot lights on appliances will go out. The Company must
243 then shut off meters before reintroducing gas to the system to ensure that it does not
244 inadvertently introduce gas into a home where appliances do not have their pilot lights lit.
245 Then, when the system pressures reach operational levels, service techs will open the
246 meter and relight each applicable appliance within the home or business.

247 **Q. Won't some customers relight their own service before day 51? Have you accounted**
248 **for this in your estimate?**

249 A. Presumably, some customers will choose to relight their own appliances during that time.
250 The same is probably true for commercial customers. Regardless, DEU would
251 nevertheless be required to visit each customer to ensure that service has safely
252 recommenced.

253 **Q. What other potential costs could result from a significant supply shortfall?**

254 A. An outage of the magnitude identified above will likely result in safety risks, product
255 damage, and property damage. As I mentioned earlier, a supply disruption is most likely
256 to occur in winter months when temperatures are very cold. Leaving customers without
257 service in such conditions for any period of time creates a health and safety risk. There is
258 also a likelihood that pipes would freeze and that some customers would experience
259 significant property damage. As Ms. Faust explains, that very type of damage was
260 widespread when Southwest Gas experienced a supply shortfall in 2011. The Company
261 is also aware that, when industrial customers on the DEU system have experienced
262 supply disruptions, they have expressed concern about the significant costs associated
263 with lost product and property damage.

264 To obtain an estimate of the total resulting cost to the State of Utah from such a service
265 disruption, the Company retained the Kem C. Gardner Policy Institute at the University
266 of Utah ("Institute") to analyze the economic impact of such an outage. The Institute
267 determined that the impact from a significant shortfall on the Gross State Product (GSP)

268 would likely fall between \$1.4 and \$2.4 Billion. The full Institute study report is attached
269 as Exhibit 3.05.

270 **V. OPERATIONAL BENEFITS OF ON-SYSTEM STORAGE**

271 **Q. Ms. Faust has indicated that the Company recommends an on-system LNG storage**
272 **facility to address the risks associated with supply disruption. Are there operational**
273 **advantages of an on-system facility like that proposed in this docket, when**
274 **compared to other off-system options?**

275 A. Yes. Gas distribution systems perform better when gas is sourced as close as possible to
276 the demand centers at high pressures. Exhibit 3.06 shows a progression of pressure
277 differences between on-system and off-system storage, after a supply shortfall occurs at
278 6:00 AM. In DEU Exhibit 3.06, there is a comparison of system pressures when using an
279 on-system storage solution like the proposed LNG facility and the off-system storage
280 solution 3A of DEU Confidential Exhibit 2.11. For purposes of this model, the Company
281 assumed that the on-system storage is located in Magna, Utah and the off-system solution
282 feeds supplies into the Payson gate. The modeling also assumes that no-notice and other
283 services allow the flow of gas to follow intra-day demand swings as well as on-system
284 storage solutions.

285 On DEU Exhibit 3.06, where contours show as red, this signifies superior pressures with
286 on-system storage. Where contours show as green, the off-system storage solution
287 outperforms the on-system option. Blue contours indicate that the off-system and on-
288 system option perform similarly.

289 During the Peak Hour, on-system storage provides much higher pressures generally
290 throughout the system than other off-system options would. In some cases, the pressures
291 are 80 psig greater with an on-system LNG plant. Aside from all the risks that are
292 associated with off-system gas supply options, an on-system LNG facility actually results
293 in higher system pressures because it would be closer to demand centers than any other
294 supply option.

295 An on-system solution like the proposed LNG facility also flows through a shorter length
296 of pipe before reaching customers' meters. This is beneficial because the gas takes less
297 time to transition from storage to customers, and because there is a shorter distance of
298 pipeline that would be vulnerable to force-majeure events, third-party damage, or other
299 scenarios discussed in the Risk Analysis document, DEU Exhibit 2.12.

300 DEU Gas Control would control the on-system facility. This direct control also provides
301 an additional benefit. Direct supply control would remove third parties from the process.
302 The value of this independence cannot be overstated. When DEU's customers require the
303 gas, gas would flow immediately without reliance on third parties or any additional
304 process to ensure gas flows. There would be no need to make a gas nomination with a
305 third-party in accordance with the NAESB nomination cycles, as described by Ms. Faust.
306 This is important because the Company may not be aware of the upstream issues or
307 supply disruption at a time convenient to the NAESB nomination schedule. Waiting for
308 another nomination opportunity would delay getting replacement supplies to customers.
309 Every second of delay that the Company is able to remove from the equation increases
310 the opportunity to maintain service to all our customers. A recent cyber incident
311 involving Energy Services Group, Inc. in which several pipeline operators said their
312 third-party electronic communications systems were shut down highlights yet another
313 element of risk that may be avoided by an on-system solution.

314 **Q. Did you conduct a similar analysis with respect to the Magnum option identified as**
315 **Option 3D in DEU Confidential Exhibit 2.11?**

316 A. Yes. I have attached that analysis as DEU Exhibit 3.07.

317 **Q. Are there advantages to owning an on-system facility over contracting with an**
318 **outside entity for an on-system solution?**

319 A. Yes. If DEU owns the facility, after the initial investment, future costs will be limited to
320 maintenance and operation costs. If an outside entity owned and operated the facility, the
321 future pricing for service would be in question and subject to change over time. It would
322 be possible for the storage prices to increase over time, and could even exceed originally
323 anticipated prices.

324 Another benefit of owning and operating an on-system storage facility is that the design
325 and maintenance would be within DEU's control. As explained in the testimony of
326 Michael Gill, DEU could design and build the facility to include redundancy on all
327 critical equipment. In addition, the Company would control scheduling to ensure that
328 maintenance occurs outside the most critical times, even outside of the heating season.

329 **Q. Are there any advantages of owning on-system LNG that differ from standard on-**
330 **system storage?**

331 A. Yes. On-system LNG would add another method to bring service to outlying
332 communities. DEU could do this by placing satellite LNG storage facilities near
333 communities that currently are not near enough to existing facilities to be economically
334 viable. Liquefied natural gas could then be trucked from the main facility to these
335 satellite LNG storage facilities for use there. Additionally, this would allow the
336 Company to utilize LNG trailers to maintain service to communities during construction
337 or force majeure – related shutdowns.

338 **Q. Would upstream storage, combined with equal amounts of deliverability and No-**
339 **Notice Transportation Service, be roughly equivalent to on-system storage?**

340 A. No. If supply is disrupted at one point, replacement supply from another distant location
341 may not adequately address the resulting supply shortfall. Since the Company should
342 plan for supply shortfalls that occur upstream of all the pipelines leading into the demand
343 center, a centrally located on-system option would be best.

344 Also, depending on where supplies enter the DEU system, off-system storage may create
345 operational difficulties that limit its efficacy.

346 Additionally, meaningful risks to a pipeline are measured in probability per mile. For the
347 reasons discussed in DEU Exhibit 2.12, the more miles of pipeline, the higher the
348 probability of an incident. Reliable supply that is located adjacent to major demand
349 centers is inherently superior to any less proximal solution.

350 **Q. Can the Company use line pack to address the supply reliability concerns?**

351 A. No. The Company already uses line pack in its current system to meet its current needs,

352 and the available line pack is already factored into my unsteady-state models. Line pack
353 is a measurement of the quantity of gas that is contained within a pipe or gas network at
354 any given time. There are fluctuations in line pack throughout the day, just as there are
355 fluctuations in pressure. While pressure is not line pack, the higher the pressure is in any
356 given line, the higher the line pack, and these measurements correlate. Our models and
357 real-time data both show that locations in the system approach operational pressure
358 minimums at times during the day when temperatures are very cold, due to demand or
359 other circumstances. This indicates that there isn't enough usable pack in the area to
360 supply demand on a design-peak day.

361 **Q. Could future feeder line projects be economically modified or enhanced to address**
362 **the supply reliability concerns?**

363 A. No, it isn't practical or economical. It would be a paradigm shift in how we have been
364 designing the system. To build more line pack into the system, the Company would need
365 to oversize reinforcements and replacements. The Company currently has approximately
366 1,700 miles of high pressure pipelines. Building more line pack into the system would
367 require the Company to construct and install additional large diameter pipelines to add
368 significant available line pack. Adding enough pipe to provide this support would cost
369 hundreds of millions of dollars and would not increase line pack enough to address our
370 supply reliability needs.

371 **Q. Could you please summarize your testimony?**

372 A. My analysis indicates that the probability of an event, that will require a supply-reliability
373 resource(s), will occur once in 14 years. Any supply shortfall(s) that occur at these
374 temperatures will be devastating. The Company could take as long as 51 days to relight

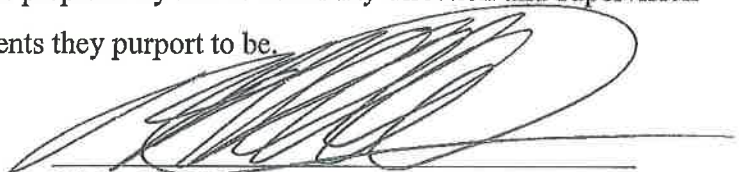
375 the calculated 650,000 customers who are likely to experience disrupted service. The
376 most reliable solution from a design and modeling standpoint is a resource that can
377 deliver supplies real time to prevent pressures from dropping and to hold the system.
378 This resource must allow for the continuance of natural gas service pending the extreme
379 cold temperature event or resulting from other causes. The only solution analyzed that
380 meets all these requirements is an on-system LNG facility. As the manager of
381 engineering systems for DEU, I am not confident that other resources presented in DEU
382 Exhibit 2.11 provide the necessary level of reliability to allow us meet our obligation to
383 serve customers.

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

385 **A. Yes.**

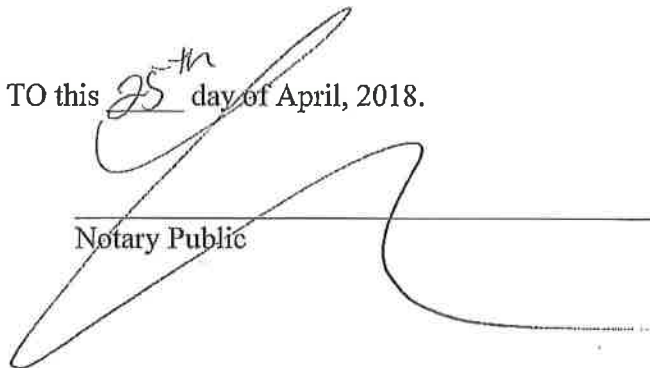
State of Utah)
) ss.
County of Salt Lake)

I, Michael L. Platt, 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 L. Platt

SUBSCRIBED AND SWORN TO this 25th day of April, 2018.



Notary Public

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