

BEFORE THE UTAH PUBLIC SERVICE COMMISSION

IN THE MATTER OF THE APPLICATION OF CORIX UTAH CITY HEATING AND COOLING LLC TO ESTABLISH A THERMAL TARIFF WITH RATES AND TERMS OF SERVICE	Docket No. 26-2666-01
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**DIRECT TESTIMONY OF
DEREK NELSON FOR CORIX**

May 1, 2026

CORIX EXHIBIT 6.0

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1

I. INTRODUCTION

2 **Q. Please state your name, business address, and position with Corix.**

3 A. My name is Derek Nelson, Director of Utility Operations, US West. Office address: 1250
4 E. 200 S. Ste 2E, Lehi, Utah, 84043.

5 **Q. Please describe the responsibilities of your current position.**

6 A. I am responsible for leading Operations and Construction for Corix district energy
7 systems in the US, west of the Mississippi. I lead a cross functional team of engineers,
8 project managers, operators, and maintenance. This team is responsible for engineering
9 design, fabrication, construction, operations, maintenance, forecasting, budgeting and
10 planning for Corix district energy systems in the US West region. In this role, I oversee
11 operations and construction of the Utah City District Energy Utility (UCDEU) which will
12 serve the Utah City development in Vineyard, Utah, which is being developed by
13 Flagborough, L.L.C. (Developer).

14 **Q. What are your qualifications to testify in this proceeding?**

15 A. I am a graduate of the University of Utah with a degree in Mathematics and Mechanical
16 Engineering. I have over 25 years of direct utility experience spanning the power, natural
17 gas and water/wastewater industries as both an operator and OEM equipment supplier.

18 **Q. Have you testified in previous regulatory proceedings?**

19 A. No.

20

II. PURPOSE OF TESTIMONY

21 **Q. What is the purpose of your testimony?**

22 A. The purpose of my testimony is to explain the project development status, site
23 preparation, the planning and construction prior to the first customer connection, the

24 operations after the first customer connections, and the operational plans for the test
25 period.

26 In addition, my testimony provides forecasting and spent costs to date relating to
27 operations and maintenance and capital expenditures. I also provide testimony on asset
28 life.

29 **Q. Please summarize your testimony.**

30 A. My testimony supports Corix's general rate case application and upcoming request for
31 interim rates. My testimony addresses the following topics.

- 32 ■ Project Development Progress and Operations
 - 33 ○ Utility preparations
 - 34 ○ How users experience receiving thermal energy
 - 35 ○ Utility safety and response
- 36 ■ Customer Letter of Support
- 37 ■ Capital Expenditures
- 38 ■ Asset life
- 39 ■ O&M

40

41 **III. PROJECT DEVELOPMENT PROGRESS AND OPERATIONS**

42 **Q. Were you responsible for writing Attachment 1, Section 5 Project Development**
43 **Progress and Operations?**

44 A. Yes. Section 5, which is incorporated into my testimony, addresses Utility Preparations,
45 How Users Experience Receiving Thermal Energy, and Utility Safety and Response. I
46 elaborate on these topics below.

47 *A. Utility Preparations*

48 **Q. Please describe the various milestones Corix has completed or will complete before**
49 **the first customer connects to the district energy system.**

50 A. With the support of our engineering and fabrication teams Corix designed and built a UL
51 listed modular Interim Energy Center (IEC) that was modeled after our modular design in
52 Bellingham, WA. The IEC was fabricated as four (4) separate modules at our fabricators
53 shop in Seattle, WA. The modules were delivered to Utah via road haulers and have been
54 re-assembled on a foundation and a semi-permanent pad.

55 The closed loop Distribution Piping System (DPS) network has been designed,
56 constructed, and buried primarily under the sidewalks of what the Developer has
57 described as Phase 1 of the Utah City Development. The Phase 1 DPS consists of
58 approximately 13,035 linear feet of pipe, 3,250 feet of trench, with distribution piping
59 ranging in size from 6" to 18".

60 The Energy Transfer Station (ETS) has been designed and fabricated in the
61 Midwest, delivered to the site and installed in the mechanical room(s) of the Developer
62 buildings. These three primary components (IEC, DPS, and ETS) have been tied together
63 to make up the UCDEU System for Phase 1 of the Utah City Development area. The
64 closed loop distribution system will be charged, tested, and placed in operation.

65 In addition to the onsite construction efforts at Utah City, Corix has opened an
66 office in Utah that will serve as the primary project management and operations base for
67 the US West. During initial start up we will have staff of four (4) Corix employees, with
68 3rd party support staff as we continue to ramp up our project management office (PMO)
69 and operations model in the US.

70 **Permits and Authorizations**

71 **Q. What permits or authorizations have been completed?**

72 A. Corix has obtained its Land Disturbance Permit with supporting SWPPP permits as well
73 as all necessary building permits and rights of way for Phase 1 of the development. We
74 have our Sanitary Sewer permit in place as well as our Air Emissions Exemption. We
75 have filed all necessary applications to operate as a legal entity including Articles of
76 Incorporation, Utah Foreign Registration and Utah Certificate of Existence.

77 **Q. What other permits or authorizations will be completed prior to the first customer**
78 **connection?**

79 A. Our Vineyard City Business license is pending approval and will be obtained as soon as
80 the IEC is through final inspection and fire inspection with the City of Vineyard. Our
81 boiler registration and final UL listing for the IEC will be finalized during commissioning
82 of the IEC.

83 **Infrastructure at UCDEU**

84 **Q. What is the Interim Energy Center (IEC) and what role does it play in the Utah City**
85 **District Energy System?**

86 A. The Interim Energy Center (IEC) is the central generation facility of the UCDEU System.
87 The UCDEU provides its customers with thermal energy via hot and chilled water
88 generated in the IEC and distributed underground through the Distribution Piping System
89 (DPS). The energy is then transferred indirectly to the buildings' space heating, cooling,
90 and domestic hot water systems using heat exchangers, referred to as an Energy Transfer
91 Station (ETS).

92

93 **Q. How was IEC #1 designed and constructed?**

94 A. The heart of the UCDEU is the IEC. The IEC was designed and built in collaboration
95 with Corix, Ramboll (Corix's engineers of record), and UMC. The engineering design
96 was modeled after Corix's system in Bellingham, WA, using a modular approach. The
97 IEC was constructed in UMC's fabrication shop in Seattle, WA, as four (4) separate UL-
98 listed modules and shipped to the Utah City project site. The modules were delivered to
99 Utah via over-the-road haulers and re-assembled on a foundation and a semi-permanent
100 pad.

101 **Q. What is the designed capacity of IEC #1?**

102 A. For the initial stage of Phase 1, a modular IEC is being designed for 1,400 tons cooling
103 and 18,000 MBH (5.3 MW) heating. Space has been allocated within this IEC (referred
104 to as IEC #1) for an additional 5,000 MBH (1.5 MW) boiler, and outside of the IEC
105 additional space has been allocated for cooling modules and/or heat recovery chiller
106 modules. There is the potential to service up to 3,000 tons of cooling load from the first
107 IEC. In addition to the heating and cooling modules, the IEC will include all associated
108 pumps, valves, lighting, chemical feeds, controls, and utility connections including water,
109 sewer, gas, and power.

110 **Q. What is the modular design intent of IEC #1, and is the facility capable of future
111 expansion?**

112 A. Yes. IEC #1 shall be Underwriters Laboratories (UL) and Electrical Testing Laboratories
113 (ETL) listed and labeled modular plant fabricated offsite and delivered to the site for
114 installation on a slab on grade. IEC #1 shall be capable of future expansion by adding
115 new modules.

116 The phased, modular approach was intentional. The bidders were provided with
117 an indicative design based on a modular approach that would allow for phased
118 installation of the modules over time, with the first module required to be in service by
119 July 1, 2026.

120 **Q. When is IEC #1 scheduled to be in service, and what is the plan for a second IEC?**

121 A. This plant is scheduled to be in service by July 1, 2026, prior to service of the first
122 customer. A second interim energy center, IEC #2, will be constructed when the demand
123 on the system from new connected customers is nearing the capacity of IEC #1. IEC #2 is
124 currently forecasted to be in service in 2029.

125 **Q. What are the long-term plans for permanent energy centers?**

126 A. The permanent energy centers will be designed and constructed in coordination with the
127 Utah City buildout, and will utilize equipment from IEC #1 and IEC #2. It is currently
128 forecasted that three (3) permanent energy centers (PECs) will be required to serve the
129 full buildout of Utah City. The location of the PECs, distributed across the development
130 area, will enable Corix to limit the pipe sizes needed to distribute the thermal energy.

131 **Q. How was the contractor for IEC #1 selected?**

132 A. The IEC #1 Request or Proposal (RFP) package was sent to 5 contractors on December
133 13, 2024, with a close date of January 16, 2025. The contractors were invited to submit
134 bids to design, build, deliver, assemble, and commission a modular IEC. Four compliant
135 bids were received. A technical evaluation committee was established consisting of four
136 employees from Corix and two consultants from the Ramboll design team. The bids were
137 reviewed based on predefined evaluation criteria including proven experience, technical
138 readiness and qualifications, financial and cost effectiveness, schedule, and exceptions. .

139 Based on the evaluation, the committee was unanimous in its recommendation of
140 advancing UMC to the next phase of the procurement process as the preferred bidder.
141 UMC is highly qualified for this work and has demonstrated through recent successful
142 projects with Corix that they can deliver on time and on budget.

143 **Q. How does IEC #1 connect to the broader district energy system?**

144 A. The IEC #1 connects to the broader district energy system through its interconnection and
145 network of the distribution piping system, distributing thermal energy across the Utah
146 City Development. The network of piping further connects to individual building Energy
147 Transfer Stations that distribute thermal energy to buildings and customers.
148 The closed-loop Distribution Piping System (DPS) network has been designed,
149 constructed, and buried primarily under the sidewalks of what the Developer has
150 described as Phase 1 of the Utah City Development. The Phase 1 DPS consists of
151 approximately 13,035 linear feet of pipe, 3,250 feet of trench, with distribution piping
152 ranging in size from 6" to 18". The Energy Transfer Stations (ETS) have been designed
153 and fabricated in the Midwest, delivered to site, and installed in the mechanical room(s)
154 of buildings 8A and 14D of the Utah City Development.

155 **Q. What is the Distribution Piping System (DPS) and what role does it play in the**
156 **District Energy System?**

157 A. The Distribution Piping System (DPS) is the underground pipe network that connects the
158 IEC to each customer building in the Utah City Development. The DPS forms the
159 backbone of the District Energy system and is a critical component providing reliable
160 heating and cooling now and, in the future, when the Permanent Energy Centers are
161 completed.

162 **Q. Please describe the design and configuration of the DPS.**

163 A. The DPS is a 4-pipe closed loop system. The DPS will consist of four underground pipes
164 — two for heating (supply and return) and two for cooling (supply and return). These
165 pipes will run through utility corridors and connect each building to the central energy
166 plants. The system is designed for high reliability and redundancy, minimal thermal
167 losses through insulation and efficient routing, and easy access for maintenance and
168 future expansion. The DPS will be installed in coordination with the Developers civil
169 infrastructure to minimize disruption and optimize construction efficiency.

170 **Q. What are the Phase 1 physical specifications of the DPS?**

171 A. The Phase 1 distribution piping system consists of approximately 13,035 linear feet of
172 HDPE and pre insulated PE-RT pipe that is fused together, and 3,250 feet of trench. The
173 distribution piping sizes range from 6" to 18", along with corresponding valving and
174 proprietary communications system conduit and fiber optic cable.

175 **Q. What pipe materials were used in the DPS, and what work is included in the**
176 **installation contract?**

177 A. The contractors were invited to submit bids to install and commission a 4-pipe heating
178 and cooling distribution system comprising 3,250 trench feet (13,000 linear feet) of
179 HDPE and pre-insulated PE-RT piping in sizes ranging from 6"–18". The contract
180 includes all excavation, fusion welding, back filling, root protection and communications
181 conduit between the IEC #1 and eight (8) buildings (3 currently under construction and 5
182 future building connections).

183

184

185 **Q. How was the DPS designed to ensure long-term reliability and cost-effectiveness?**

186 A. Careful design and hydraulic analysis have allowed for right-sized pipes and CapEx
187 savings. The design for the piping was done in collaboration with Corix and Ramboll
188 (our engineers of record), with the first phase being installed by a local contractor,
189 VanCon.

190 At full build-out, the system will include approximately 11.1 miles of buried
191 piping. The distributed location of future permanent energy centers is also designed to
192 minimize pipe sizes. The location of the Permanent Energy Centers, distributed across the
193 development area, will enable Corix to limit the pipe sizes needed to distribute the
194 thermal energy. An alternative approach that relies on only one PEC would lead to much
195 larger pipes.

196 Reliability is supported through conservative design standards, robust pipe
197 materials, and appropriate safety factors for pressure, temperature, and environmental
198 conditions. The network layout has been coordinated with long-range development plans
199 to minimize future rework, and burial locations have been selected to reduce exposure to
200 external risks and facilitate access for maintenance and repairs over the life of the asset.
201 These measures are intended to extend asset life and reduce unplanned outages.

202 Cost-effectiveness was achieved by phasing DPS installation in alignment with
203 customer connections and development timing, avoiding unnecessary upfront capital
204 investment while still establishing a backbone capable of supporting full build-out. This
205 scalable approach allows capital deployment to closely track load growth, helping to
206 manage customer rates and overall system affordability in a regulated utility context.

207

208 **Q. How was the installation contractor for the DPS selected?**

209 A. The Invitation to Bid (ITB) package was sent to five (5) piping contractors on June 2nd,
210 2025 and closed on June 25th, 2025. Four compliant bids were received. A technical
211 evaluation committee was established, consisting of four employees from Corix and two
212 consultants from the Ramboll design team. The bids were reviewed by the technical
213 evaluation committee based on a set of predefined evaluation criteria including proven
214 experience (30 points), financial and cost effectiveness (40 points), schedule (15 points),
215 and exceptions (15 points). Based on the above evaluation and after interviewing three
216 (3) of the contractors, the evaluation committee was unanimous in its recommendation of
217 advancing VanCon to the next phase of the procurement process as the preferred bidder.
218 VanCon is qualified for the work, was the lowest bidder, meets Corix's requested
219 schedule, and is willing to stand behind their work with a 10-year extended warranty. The
220 bids are in line with the engineer's pre-tender estimate and budget carried in Corix's rate
221 model.

222 **Q. Why did the Company select a 10-year extended warranty on the DPS installation?**

223 A. The evaluation committee recommends including VanCon's 10-year extended warranty
224 for \$120,000. Included in the base bid is a 2-year warranty. Extending this to 10 years
225 aligns with the piping manufacturer's warranty and ensures that the contractor is invested
226 in the long-term operational success of the system while de-risking the project for Corix
227 and helping ensure proper QA/QC processes.

228

229

230 **Q. How will the DPS be commissioned and tested before customers begin receiving**
231 **service?**

232 A. During the test period, in coordination with sub-contractors and vendors, Corix will
233 connect the three primary components (IEC, DPS, and ETSs) of the UCDEU System
234 together. All piping will be pressure tested and filled with water. The control systems,
235 heating and cooling loops as well as the ETS systems will be monitored and tested for
236 quality and functionality. The Supervisory Control and Data Acquisition (SCADA)
237 system will be linked to Corix's control center where the system will be monitored 24/7.

238 **Q. What is an Energy Transfer Station (ETS) and what role does it play in the District**
239 **Energy System?**

240 A. The Energy Transfer Station (ETS) is the critical point of connection between the
241 UCDEU System and each customer building. Each building connected to UCDEU will
242 have an ETS located in its mechanical room. The ETS serves as the interface between the
243 utility's distribution system and the building's internal HVAC systems. Each ETS will
244 include heat exchangers for space heating, cooling, and domestic hot water; flow meters
245 and temperature sensors for accurate energy metering; and control valves and automation
246 systems for efficient operation.

247 The Company owns and operates each ETS. In this manner, the ETS represents
248 both the physical and commercial boundary between the utility's infrastructure and the
249 customer's building systems.

250 **Q. How is the ETS formally defined under the Utility's Tariff?**

251 A. The Energy Transfer Station means the separate heat exchangers for space heating,
252 cooling and domestic hot water (excluding domestic hot water storage tanks), or one

253 heating/cooling heat exchanger where applicable, energy meters including temperature
254 sensors and flow meters, control panel and all pipes, fittings and other associated
255 equipment that control the transfer, and measure Thermal Energy from the Distribution
256 System to a Building System.

257 **Q. What services does each ETS provide, and does service vary by building type?**

258 A. The ETS facilitates the transfer of thermal energy, both heating and cooling from the
259 District Energy system to the Building heating and cooling system. Service provided
260 through the ETS is tailored to each building's requirements. For Phase 1, Blocks 14D and
261 8A will receive full service for heating, cooling and domestic hot water. The Resort Pool
262 will receive heating and domestic hot water service only.

263 **Q. What are the major components of each ETS?**

264 A. Each ETS includes the following major components: heat exchanger; primary piping,
265 valves, gauges and specialties; secondary piping, valves, gauges and specialties; energy
266 meter; control devices; control panel; and power and communications connections of all
267 skid-mounted devices.

268 The control system also includes a programmed controller that provides alarms,
269 trending, and a graphics interface integrated with the Company's existing front end, and is
270 connected to the Company's SCADA system for 24/7 monitoring.

271 **Q. How are the ETS units designed and fabricated?**

272 A. The ETS units are designed as prefabricated, skid-mounted assemblies that are built off-
273 site and delivered to each building's mechanical room. The project intent is for the
274 delivery of pre-assembled, skid-mounted ETS to the site. Prior to delivery to site, the
275 ETS Proponent shall complete all required factory testing, pipe flushing and

276 commissioning of the ETS skid. The design for ETS was done in collaboration with
277 Corix, Ramboll and Danfoss. Danfoss is fabricating the ETS skids at a Midwest
278 fabrication shop; they will be shipped to the site with final connections made on site in
279 the building mechanical rooms. The ETS have been designed and fabricated in the
280 Midwest, with the first delivery scheduled for May 7 for building 14D, with installation
281 in the mechanical room to follow.

282 **Q. Who was selected to design and build the ETS units, and how was that contractor**
283 **chosen?**

284 A. The Request for Proposals (RFP) package was sent to five (5) experienced Design/Build
285 vendors on July 21st, 2025 and closed on August 15th, 2025. The RFP closed with four
286 (4) compliant bids received. A technical evaluation committee was established, consisting
287 of four employees from Corix and two consultants from the Ramboll design team. The
288 bids were reviewed based on predefined evaluation criteria including proven experience
289 (30 points), financial and cost effectiveness (40 points), schedule (15 points), and
290 exceptions (15 points). Based on the evaluation and after interviewing two (2) of the
291 vendors, the evaluation committee was unanimous in its recommendation of advancing
292 Danfoss to the next phase of the procurement process as the preferred vendor. Danfoss is
293 a large, vertically integrated manufacturer of HVAC equipment including heat
294 exchangers, valves and controls. They are also the world's largest supplier of ETS skids
295 with thousands of units in operation worldwide. Danfoss's standardized approach and
296 vertical integration of components allows them to provide high quality ETS's at a fraction
297 of the price of its competitors, and they can meet the project's schedule.

298

299 **Q. How does the ETS award price compare to the budget?**

300 A. The Danfoss proposal represented a significant improvement over pre-tender estimates.
301 While all bids received were in line with the pre-tender estimates and rate model budgets,
302 the Danfoss proposal was the clear standout with significant cost savings to the project.

303 **Q. How does the ETS connect to the broader District Energy System, and who is**
304 **responsible for the connection?**

305 A. Field installations include: placement of ETS in the mechanical room; installation of
306 primary piping between the point of entry of the Corix distribution piping and the ETS;
307 installation of power wiring from a local power panel; installation of communications
308 from a local junction box installed by Corix as part of a DPS contract; and installation of
309 remote control devices, and all required conduit and control wiring between the remote
310 devices and the ETS control panel.

311 Under the Infrastructure Agreement, each Building System will be connected to
312 the ETS by the Developer, in the presence of a Corix representative, once the Building
313 System has been verified as having been designed, constructed and installed in full
314 compliance with the final Thermal Energy delivery parameters agreed and approved, has
315 been flushed and cleaned, and is capable of performing the function for which it was
316 designed.

317 **Q. What is the long-term scale of the ETS deployment across Utah City?**

318 A. This is the first phase of a multiphase project which at full build-out is expected to
319 service the heating and cooling requirements of over 64 buildings, each with its own
320 heating and cooling ETS. For efficiencies, Corix is in the process of standardizing the
321 ETS design and manufacturer as much as possible throughout this project.

322 *B. How Users Experience Receiving Thermal Energy*

323 **Q. Please provide an overview of how the UCDEU System operates to deliver thermal**
324 **energy to buildings.**

325 A. The UCDEU System delivers heating, cooling, and domestic hot water services to
326 connected buildings through an integrated, closed-loop network of three primary
327 components: the IEC, the DPS, and ETS. A district energy system has a central energy
328 plant (CEP) that services the thermal customers through a DPS and the thermal energy at
329 the ETS is transferred to the in-building thermal system.

330 Each component plays a distinct and essential role: the IEC generates thermal
331 energy, the DPS transports it, and the ETS delivers it to the customer building. Together,
332 these three primary components (IEC, DPS, and ETS), when tied together, make up the
333 District Energy System for Phase 1 of the Utah City development area.

334 **Q. How does the IEC generate thermal energy for the system?**

335 A. The IEC is the central production facility of the District Energy System. It houses both
336 the heating and cooling generation equipment. The central energy plants will house
337 natural gas boilers for peak heating demand and backup capacity; electric chillers and
338 cooling towers for peak cooling demands; heat recovery chillers that capture waste heat
339 from cooling operations; and pumps, heat exchangers, and control systems for efficient
340 energy distribution.

341 In heating mode, the natural gas boilers heat water, which is then circulated under
342 pressure through the DPS to customer buildings. In cooling mode, electric chillers
343 remove heat from the water circuit, producing chilled water that is similarly circulated to

344 customer buildings. The IEC is designed with a modular approach so that capacity can be
345 added over time as the development grows and customer connections increase.

346 **Q. How does the DPS transport thermal energy from the IEC to customer buildings?**

347 A. Hot water produced in the IEC flows out through the heating supply pipe to connected
348 buildings, where heat is extracted at the ETS. The cooled return water flows back to the
349 IEC through the heating return pipe to be reheated and recirculated. An identical, separate
350 closed loop operates for cooling: chilled water flows out through the cooling supply pipe,
351 absorbs heat at the ETS, and returns to the IEC through the cooling return pipe to be
352 rechilled. This fully closed-loop design prevents any loss of system fluid and maintains
353 system pressure and water quality.

354 **Q. At what temperatures does the system supply and return hot water and chilled**
355 **water?**

356 A. The system is designed to deliver thermal energy within specific temperature parameters
357 agreed upon for each building. For Block 14D, the Building System Peak Design Supply
358 Water Temperatures on the customer side of the heat exchanger are: Heating Water —
359 120°F; Cooling Water — 45°F; and Domestic Hot Water — 120°F. The Building System
360 Peak Design Return Water Temperatures are: Heating Water — 100°F; and Cooling
361 Water — 57°F.

362 These temperatures are established in the Energy Delivery Parameters agreed
363 between Corix and the building's mechanical engineer and are designed to match the
364 building's HVAC system requirements. Return temperatures are important to the
365 efficiency of the district energy system — cooler heating returns and warmer cooling

366 returns indicate good energy extraction by the building and allow the IEC to operate
367 efficiently.

368 **Q. What is the role of the ETS in delivering thermal energy to each building?**

369 A. The ETS is the point of interface between the Company's distribution system and the
370 customer's in-building HVAC system. It uses heat exchangers to transfer thermal energy
371 indirectly — meaning the district energy fluid (utility-side) and the building's internal
372 hydronic fluid (building-side) never mix. Each building connected to UCDEU will have
373 an ETS located in its mechanical room. The ETS serves as the interface between the
374 utility's distribution system and the building's internal HVAC systems. Each ETS will
375 include heat exchangers for space heating, cooling, and domestic hot water; flow meters
376 and temperature sensors for accurate energy metering; and control valves and automation
377 systems for efficient operation. Flow through the primary district energy side of the ETS
378 is controlled to achieve the building's supply temperature set point. ETS's generally have
379 three heat exchangers: one for space heating, one for space cooling and one for domestic
380 hot water. This is typical of most four pipe district energy systems around the world.

381 **Q. How does the ETS protect building systems from the district energy fluid, and vice**
382 **versa?**

383 A. The ETS operates as an indirect heat exchange system. The thermal energy — whether
384 heat or cooling — is transferred across the heat exchanger surfaces without any physical
385 contact or mixing of the two fluid circuits. This design provides two key protections: it
386 prevents contaminants or pressure fluctuations on the building side from affecting the
387 district energy system, and it ensures that district energy fluid does not enter the
388 building's domestic hot water or HVAC systems. The domestic hot water heat exchanger

389 uses a double-walled, plate-and-frame design specifically to protect potable water
390 systems.

391 **Q. How does the ETS measure energy consumption for billing purposes?**

392 A. Energy consumption is measured at the ETS using dedicated energy meters, which
393 calculate the thermal energy delivered to each building based on the temperature
394 differential between supply and return and the volumetric flow rate of water through the
395 ETS. The ETS includes energy meters, control devices, a control panel, and power and
396 communications connections of all skid-mounted devices. The meter data is transmitted
397 to the Company's SCADA system and used as the basis for customer billing under the
398 utility's approved tariff. This approach ensures that customers are charged only for the
399 thermal energy they actually consume, and not for system losses or energy consumed by
400 other customers.

401 **Q. How is the overall system monitored and controlled during operation?**

402 A. The SCADA system will be linked to Corix's control center where the system will be
403 monitored 24/7. The control systems, heating and cooling loops as well as the ETS
404 systems will be monitored and tested for quality and functionality.

405 The ETS control panel includes an Allen-Bradley PLC (programmable logic
406 controller) with a VTScada overlay interface, providing alarms, trending, and graphical
407 monitoring integrated into the Company's front-end control system. This real-time
408 monitoring capability allows Corix operations staff to identify and respond to any
409 performance anomaly — such as unusual return temperatures, flow irregularities, or
410 pressure deviations — before service to customers is affected.

411 **Q. How does the system handle simultaneous heating and cooling demands from**
412 **different buildings?**

413 A. The four-pipe closed-loop design allows simultaneous heating and cooling service to
414 different buildings. Hot water and chilled water circuits are fully independent and operate
415 in parallel. This smart, shared-energy approach balances simultaneous heating and
416 cooling needs from various building types. As the system matures and heat recovery
417 chillers are added to the IEC, the waste heat generated by the cooling process can be
418 captured and redirected into the heating loop, significantly improving overall system
419 energy efficiency.

420 **Q. After the ETS, how does the customer's building receive and use the thermal**
421 **energy?**

422 A. Once thermal energy crosses the heat exchanger at the ETS, it enters the building's own
423 internal hydronic system — which is owned and operated by the building owner or
424 Developer, not by the Company. The building's internal heating system distributes hot
425 water to fan coil units, radiant panels, or other terminal heating equipment to provide
426 space heat. The building's cooling system distributes chilled water to air-handling units or
427 fan coils to provide space cooling. The domestic hot water system serves the building's
428 potable hot water needs. The ETS control system regulates the flow of district energy
429 fluid to maintain the building's required supply temperatures, automatically adjusting to
430 the building's real-time heating and cooling demand.

431

432

433 **Q. What is the service boundary between the Company's District Energy System and**
434 **the customer building?**

435 A. The Company's service and responsibility extends to — and ends at — the ETS, which is
436 located in the mechanical room of each customer building. The ETS is the point of
437 interconnection between the Company's infrastructure and the customer's Building
438 System. Beyond the ETS, the Building System — which includes all in-building piping,
439 pumps, fan coils, thermostats, and in-unit HVAC equipment — is owned and operated by
440 the building owner or Developer, not by the Company.

441 This boundary is fundamental to the Company's service model. District energy
442 utility customers typically own entire buildings. Sometimes a building's ETS can be
443 designed to service multiple occupant types within the buildings, for example both
444 commercial and residential. Utility thermal service to an individual residential suite in an
445 apartment building is rare in the industry. Given the nature of thermal energy, it is a
446 business-to-business model where the utility has relatively larger-volume customers (e.g.,
447 equivalent to small commercial or large commercial customers of a gas or electric
448 utility).

449 **Q. After the ETS, how does thermal energy travel to individual units within the**
450 **building?**

451 A. Once thermal energy crosses the ETS heat exchangers, it enters the building's own
452 internal hydronic piping system — the Building System — which distributes hot water
453 for heating, chilled water for cooling, and hot water for domestic use throughout the
454 building to individual residential or commercial suites.

455 In a typical residential building connected to the District Energy System:

- 456 • **Space Heating:** Hot water (at approximately 120°F supply, returning at 100°F)
457 flows from the ETS through the building's internal heating loop to fan coil units,
458 radiant heating panels, or other terminal heating equipment in each suite or
459 common area. A thermostat in each unit calls for heat, which opens a valve and
460 allows hot water to flow through the terminal unit, releasing heat into the space.
- 461 • **Space Cooling:** Chilled water (at approximately 45°F supply, returning at 57°F)
462 flows from the ETS through the building's internal cooling loop to fan coil units
463 in each suite. When a thermostat calls for cooling, chilled water circulates through
464 the coil, cooling and dehumidifying the air in the space.
- 465 • **Domestic Hot Water:** Hot water is also supplied to the building's domestic hot
466 water plumbing system, providing potable hot water to taps, showers, and fixtures
467 in individual suites. This is provided through the double-walled domestic hot
468 water heat exchanger in the ETS, ensuring complete isolation between the district
469 energy fluid and potable water.

470 An equivalent residential building connected to UCDEU would receive centralized hot
471 and chilled water for space conditioning and domestic hot water. While these buildings
472 would still maintain electric and gas service for non-thermal uses, their overall energy
473 profile would be significantly different. The centralized system reduces peak electricity
474 demand by shifting thermal loads to a more efficient, utility-scale platform.

475 **Q. Who is responsible for the in-building distribution system and the HVAC**
476 **equipment in individual units?**

477 **A.** The Building System — everything beyond the ETS on the building side — is the
478 responsibility of the building owner or, where applicable, the Developer. The end-user

479 tenants of a customer may receive indirectly the Thermal Energy services of the utility.
480 Tenants are non-transient users of Thermal Energy who have a tenancy agreement with
481 the utility Customer.

482 The Company's obligation is to deliver thermal energy to the agreed specifications
483 at the ETS. The building owner is responsible for ensuring that the in-building
484 distribution system and in-unit HVAC equipment are designed, installed, and maintained
485 to properly use that thermal energy to heat and cool individual suites.

486 **Q. How do tenants in individual suites control the heating and cooling in their units?**

487 A. Individual suite control is managed through the building's in-unit HVAC equipment —
488 typically fan coil units or similar terminal devices — which are controlled by individual
489 thermostats or building automation systems. When a resident adjusts their thermostat, the
490 building's control system regulates the flow of hot or chilled water through the terminal
491 unit in that suite. This is entirely within the Building System, not within the Company's
492 infrastructure.

493 The comfort experience of an individual tenant is therefore a function of both the
494 quality of the Company's thermal energy delivery to the ETS, and the performance and
495 maintenance of the building's own internal distribution and terminal equipment.

496 **Q. What happens if a tenant in an individual unit experiences a heating or cooling
497 problem?**

498 A. The Company's responsibility and investigative authority is limited to the District Energy
499 System up to and including the ETS. If the tenant is not the owner or operator of the
500 Building, the tenant is required to inform and coordinate with the owner or operator of
501 the Building to address any Building System issues. If a tenant reports a problem, the

502 tenant should reach out to the Developer's property manager first. If the problem cannot
503 be resolved by the property manager, the tenant can reach out to the Company. The
504 Company will investigate whether the issue originated with the utility's thermal energy
505 delivery — for example, whether the ETS is receiving supply at the correct temperature
506 and flow, and whether the heat exchanger and controls are functioning properly.
507 If the issue is found to originate within the Building System — for example, a failed fan
508 coil unit, a blocked internal pipe, or a malfunctioning thermostat in the suite — the
509 Company will refer the matter to the building owner to address.

510 *C. Utility Safety and Response*

511 **Q. Please provide an overview of the key safety considerations associated with**
512 **operating the Utah City District Energy System.**

513 A. Operating a district energy system involves a range of safety considerations across the
514 Interim Energy Center (IEC), the Distribution Piping System (DPS), and the Energy
515 Transfer Stations (ETS). UCDEU is designed with a strong emphasis on safety and
516 operational reliability. Key features include N-1 redundancy in major equipment,
517 ensuring continued service even if one component fails; backup power systems to
518 maintain operations during electrical outages; centralized monitoring and control systems
519 for real-time performance management; and compliance with all applicable building,
520 safety, and environmental codes. The system will be operated by trained personnel and
521 supported by Corix's regional and corporate teams, ensuring high standards of service and
522 rapid response to any issues.

523 The principal safety areas across the system are: natural gas and combustion
524 safety, piping system integrity, electrical safety, chemical and water treatment safety,

525 cooling tower safety, potable water protection, seismic safety, and 24/7 SCADA

526 monitoring and emergency response.

527 **Natural Gas Combustion Safety (Interim Energy Center)**

528 **Q. What are the safety risks associated with the natural gas boilers in the IEC, and**
529 **how are they managed?**

530 A. The IEC contains natural gas-fired boilers that produce hot water for the heating loop.

531 Natural gas combustion introduces risks of gas leakage, fire, and the accumulation of

532 combustion byproducts including carbon monoxide. These risks are managed through a

533 combination of engineered safeguards and ongoing monitoring.

534 The IEC is equipped with a dedicated safety sensor suite. The annual safety sensor

535 maintenance program includes sensors for flow level, natural gas, carbon monoxide, and

536 oxygen. These sensors continuously monitor the IEC environment and trigger alarms if

537 hazardous conditions are detected.

538 The IEC also includes a Fire Alarm Control Panel with cellular dialer and remote

539 monitoring capability. The IEC modules are UL-listed and ETL-labeled, confirming they

540 meet applicable safety standards for industrial equipment. All work was performed under

541 the authority of licensed mechanical and electrical contractors and inspected by the

542 relevant authority with jurisdiction.

543 UMC's boiler license was approved, and all electrical and mechanical licenses

544 were sent to and confirmed by Corix. Special inspections were coordinated for the

545 module, site piping, and cooling tower.

546

547

548 **Piping System Integrity and Testing**

549 **Q. How does Corix ensure the integrity and safe operation of the piping systems across**
550 **the district energy network?**

551 A. The district energy system relies on a network of piping across the IEC, the buried DPS,
552 and the ETS installations in each building. Prior to commissioning, all piping is subject to
553 hydrostatic pressure testing to verify the integrity of all connections, welds, and joints.
554 Pipe marking standards were confirmed to meet ASME Standard.

555 Piping is fully insulated throughout the system to minimize heat loss and to
556 protect workers and building occupants from contact with hot or cold surfaces. Color-
557 coded PVC jacketing identifies each pipe circuit by fluid type and service.

558 Isolation valves are installed at key points throughout the DPS and IEC to allow
559 sections of the system to be safely shut down and isolated for maintenance without
560 interrupting service to connected buildings. Lockout/tagout procedures are followed for
561 all maintenance activities on the piping system.

562 The DPS was installed by VanCon Inc. under a contract that includes a 10-year
563 extended warranty, which aligns with the piping manufacturer's warranty and provides
564 additional assurance of long-term system integrity.

565 **Electrical Safety**

566 **Q. What are the electrical safety considerations for operating the district energy**
567 **system?**

568 A. The IEC operates under significant electrical loads, including dual electrical service
569 connections to power the chiller plant, pumps, cooling towers, and controls. Electrical
570 installation and connections were performed by licensed electrical contractors,

571 coordinated with Rocky Mountain Power (the local electric utility), and inspected by the
572 AHJ before energization.

573 The IEC includes a fire alarm system integrated with the building's electrical
574 panel, with multicolored alarm beacons and a Fire Alarm Control Panel with remote
575 monitoring. All PLC control panels underwent factory acceptance testing and UL
576 inspection before deployment.

577 Electrical safety for ongoing operations follows standard utility practices
578 including proper lockout/tagout during maintenance, restricted access to electrical rooms,
579 and regular inspection of electrical connections and grounding.

580 **Chemical and Water Treatment Safety**

581 **Q. What are the safety considerations associated with chemical water treatment in the**
582 **district energy system?**

583 A. The district energy system requires ongoing chemical water treatment to prevent
584 corrosion, scaling, and biological growth within the closed-loop piping circuits. The
585 annual chemical treatment program is included in the ongoing O&M program, modeled
586 on similar Corix systems including the Oval IEC and DPS treatment program.

587 Chemical treatment products — which may include corrosion inhibitors, biocides,
588 scale inhibitors, and pH adjusters — require proper handling procedures. Staff handling
589 these chemicals use appropriate personal protective equipment (PPE) and follow safety
590 data sheet (SDS) requirements. Chemical storage areas are designated and properly
591 ventilated. Dosing systems are automated where possible to minimize direct handling and
592 worker exposure.

593

594 **Cooling Tower Safety — Legionella Risk**

595 **Q. What are the safety risks associated with the cooling towers, and how are they**
596 **managed?**

597 A. The IEC includes cooling towers for heat rejection from the chiller plant. Cooling towers
598 require particular attention due to the risk of legionella bacterial growth. Legionella
599 thrives in warm, stagnant water and can be aerosolized through cooling tower drift,
600 potentially causing Legionnaires' disease in people who inhale contaminated aerosols.

601 The primary controls for Legionella risk are: (1) maintaining proper water
602 treatment chemistry including biocides; (2) regular inspection and cleaning of the tower
603 basin and fill media; (3) controlling water temperature to avoid conditions favorable to
604 bacterial growth; and (4) ensuring proper water circulation to prevent stagnation.

605 The IEC cooling towers include basin heaters and heat trace for freeze protection
606 during winter operation, which also helps maintain continuous water circulation and
607 prevents stagnant conditions that could promote bacterial growth. Basin heater and heat
608 trace were confirmed sufficient for cooling tower loop freeze protection during cold
609 weather operation.

610 **Thermal Burn and Scalding Safety**

611 **Q. What risks do elevated temperature hot water systems present, and how are they**
612 **mitigated?**

613 A. The heating loop circulates hot water at supply temperatures of up to 120°F. Contact with
614 hot water can cause burns. Safety measures include: insulated piping throughout the IEC,
615 DPS, and ETS to minimize surface temperatures; proper equipment clearances in the IEC

616 mechanical room to allow safe movement of operations staff; and warning labels on hot
617 surfaces.

618 The ETS installation requires a minimum 40 inch clearance on all sides of the
619 ETS skid and in front of the control panel, providing safe working room for operators.

620 All piping is insulated with color-coded PVC jacketing to identify fluid type and
621 temperature.

622 The domestic hot water heat exchanger uses a double-walled design, ensuring that
623 district energy fluid and potable hot water remain fully separated, preventing any risk of
624 district energy system chemicals entering the building's potable water supply.

625 **Seismic Safety (ETS)**

626 **Q. How does the Company address seismic safety in the design and installation of the**
627 **ETS in Utah?**

628 A. Utah is located in a seismically active region. The ETS installation specifically requires
629 seismic review to protect both equipment and building occupants. The ETS scope of
630 work requires that a registered professional engineer in Utah review and sign off on all
631 hangers and supports for the ETS skid installation, confirming compliance with seismic
632 requirements applicable to the City of Vineyard.

633 All ETS materials must be new and free from defect, and all work must comply
634 with nationally recognized standards including NFPA, NEC, ASTM, and UL.

635 **Permitting, Regulatory Compliance, and Air Emissions**

636 **Q. What permits and authorizations has Corix obtained to demonstrate regulatory**
637 **safety compliance?**

638 A. Corix has obtained its Land Disturbance Permit with supporting SWPPP permits. All
639 necessary building permits and rights of way for Phase 1 of the development have been
640 secured. Corix has its Sanitary Sewer permit in place as well as its Air Emissions
641 Exemption. Corix has filed all necessary applications to operate as a legal entity
642 including Articles of Incorporation, Utah Foreign Registration and Utah Certificate of
643 Existence.

644 The Air Emissions Exemption confirms that the IEC's boiler emissions are below
645 regulatory thresholds requiring a full air permit, consistent with the use of high-efficiency
646 condensing boilers operating at the scale of the Utah City IEC.

647 **24/7 SCADA Monitoring and System-Wide Safety**

648 **Q. How does Corix monitor the district energy system for safety and operational issues**
649 **on an ongoing basis?**

650 A. The SCADA system will be linked to Corix's control center where the system will be
651 monitored 24/7. The control systems, heating and cooling loops as well as the ETS
652 systems will be monitored and tested for quality and functionality.

653 The SCADA system provides real-time visibility into temperatures, flow rates,
654 and alarm conditions across the IEC, DPS, and ETS. Safety alarms — including those for
655 natural gas detection, CO detection, and abnormal flow or temperature conditions —
656 trigger automated alerts to operations staff, enabling rapid response. The ETS control

657 panels include backup UPS power for PLC systems to ensure continued monitoring even
658 during brief power interruptions.

659 Corix and UMC conduct weekly site safety meetings during construction, and this
660 culture of ongoing safety management will continue into operations through regular
661 safety training, documented operating procedures, and coordination with Corix's regional
662 and corporate operations teams.

663 **Q. Is there a phone number to call if a customer or end-user experiences a service**
664 **outage for related to thermal energy service provided by Corix?**

665 A. Yes, for service issues or outages, customers and end-users can call 1-855-852-5703. For
666 customer care and general inquiries, customers or end-users can call 1-866-457-7273.

667 **IV. CUSTOMER LETTER OF SUPPORT**

668 **Q. Were you responsible for writing Attachment 1, Section 6 Customer Letter of**
669 **Support?**

670 A. Yes. Section 6 is incorporated into my testimony.

671 **Q. Did you receive a Customer Support Letter? If so, what did the letter contain?**

672 A. Yes, I did receive a Customer Support Letter from Flagborough, the Utah City developer
673 and the UCDEU customer for all the lots/buildings in the development. The letter
674 explained that Flagborough was in full support of the GRC Application including the
675 Request for Interim Rates that will be proposed by Corix. The letter is included as Corix
676 Exhibit 6.1.

677 **V. CAPITAL EXPENDITURES**

678 **Q. What is the purpose of this section of your testimony?**

679 A. This section of my testimony provides an overview of the capital investments made by
680 the Company in constructing the Phase 1 infrastructure of the UCDEU System. It
681 describes what was built, what it cost, how the procurement was conducted, and how
682 those investments support the Company's obligation to provide safe and reliable thermal
683 energy service to customers.

684 Phase 1.1, the initial segment of Phase 1, encompasses the IEC, the main
685 distribution piping and three (3) of the eight (8) ETS's. The IEC has been designed to
686 meet the full demand of Phase 1, with additional branch piping and five (5) additional
687 ETS skids will be delivered 'just in time' as the Developer progresses.

688 The detailed financial derivation of Plant in Service, rate base, depreciation, and the
689 resulting revenue requirement is addressed in the testimony of my colleague who
690 sponsors the GRC Financial Model (Highly Confidential Exhibit 7.1). My testimony is
691 focused on the operational rationale and prudence of the capital program, consistent with
692 good utility practice.

693 **Q. What are the three primary categories of capital assets forming the Plant in Service**
694 **for the UCDEU?**

695 A. The capital assets of the UCDEU System are organized into three primary categories as
696 reflected in the Capex Summary tab of the financial model (Highly Confidential Exhibit
697 7.1):

698 **Production Assets** — the Interim Energy Centre (IEC #1), including heating boilers,
699 chilled water plant, cooling towers, pumps, controls, and structure;

700 **Distribution Assets** — the Distribution Piping System (DPS), including underground
701 piping, valves, communications conduit, and the Energy Transfer Stations (ETS) installed
702 in each customer building; and,

703 **General Plant** — office, IT, Development and other general infrastructure assets.

704 The total capital additions for the Phase 1 are \$37,737,869, comprising Production assets
705 of \$20,865,269, Distribution assets of \$16,870,770, and General Plant assets of \$81,830.

706 See Corix Exhibit 6.3 Capital Expenditures by CWIP Projects and Phases.

707 **Q. Please describe the capital expenditure program for each asset category.**

708 **A.** The Company's assets are organized into three macro-categories — **Production,**
709 **Distribution,** and **General Plant** — plus **Contributions in Aid of Construction**
710 (CIAC). Within each macro-category, assets are assigned to specific depreciation sub-
711 categories, each with an individual useful life. Where an asset group contains multiple
712 sub-categories, a composite weighted-average useful life is derived based on the relative
713 cost proportion of each component.

714 The capital program for each category is summarized below.

715 **1. Production Assets — Interim Energy Centre (IEC #1)**

716 The IEC #1 is the central production facility of the district energy system, housing
717 the heating boilers, electric chillers, cooling towers, pumps, and associated
718 controls and structure. It was designed, fabricated, and delivered by UMC, the
719 winning contractor from a competitive procurement process.

720 The IEC site work was awarded to Vancon Inc. to provide the temporary
721 foundation, utility infrastructure, parking lot, lighting and landscaping.

722

723 **2. Distribution Assets — DPS and ETS**

724 **Distribution Piping System (DPS)**

725 The DPS was procured through a competitive Invitation to Bid (ITB) process.

726 The DPS budget carried in the rate model is \$10,007,185 for Phase 1. The Phase
727 1.1 contract award is within the overall Phase 1 budget.

728 **Energy Transfer Stations (ETS)**

729 The ETS units for Phase 1.1 (covering Blocks 14D, 8A, and the Resort Pool) were
730 procured through a competitive Invitation to Bid (ITB) process. The phase 1 ETS
731 budget is \$6,863,585 and the ETS phase 1.1 is within budget.

732 **3. General Plant**

733 General Plant includes IT systems, office equipment, control room infrastructure,
734 and VT Scada system. General Plant assets total \$81,830.

735 **Q. How were the capital expenditures determined to be prudent?**

736 **A.** The prudence of the Company's capital expenditures is supported by the following:

737 **Competitive Procurement:** All three major capital components — IEC #1, the DPS, and
738 the ETS — were procured through formal competitive bidding processes. Multiple
739 qualified contractors submitted bids; all bid prices were within the range of the engineer's
740 pre-tender estimates and the rate model budgets. The Division and Office of Consumer
741 Services recommended approval of the CPCN application, noting Corix described phased
742 interim plants, technical parameters, and estimated approximately 20% CapEx savings
743 from the district energy approach relative to conventional alternatives.

744 **Value Engineering:** Significant value engineering was undertaken, particularly for IEC
745 #1, resulting in a significant reduction in initial capital. Key savings included removal of

746 heat recovery chillers deferred to a later phase, and reduction of chilled water pump count
747 from 3 to 2 units.

748 **Modular, Phased Design:** The capital program is designed to scale with actual customer
749 demand. Modular equipment installation matches load growth and minimizes stranded
750 capital. The system remains flexible and cost-effective throughout its development. 7

751 **Just in Time Delivery of Assets:** Facilities and Assets have been timed for delivery
752 using a ‘just in time’ approach that is consistent with the Developers buildout schedule
753 and needs.

754 **VI. ASSET LIFE**

755 **Q. Were you responsible for writing Attachment 1, Section 14.2 Asset Service Lives**
756 **and Classification?**

757 A. Yes. Section 14.2 is incorporated into my testimony.

758 **Q. What is the purpose of this section of your testimony?**

759 A. The purpose of this section is to describe the useful life assigned to each category of
760 thermal plant assets owned and operated by UCDE System, to explain the methodology
761 the Company used to establish those useful lives, and to demonstrate that the Company's
762 asset life framework is reasonable and consistent with good utility practice.

763 **Q. How does the Company assign useful lives to its thermal plant assets?**

764 A. The Company assigned useful lives to thermal plant assets using a combined
765 methodology that incorporated two primary inputs: (1) manufacturer- or fabricator-
766 recommended service life for each specific piece of equipment or component, as
767 documented in product specifications, technical submittals, and installation data; and (2)
768 expert engineering judgment, applied by qualified operations and engineering personnel

769 who evaluated each asset category in the context of the Company's specific operating
770 environment, maintenance practices, and district energy system design.

771 The expert engineering judgment was provided by three experienced Corix
772 employees, each of whom brings direct experience in the design, construction, and
773 operation of district energy and thermal utility systems. Where manufacturer
774 recommendations existed, they served as a reference baseline. Expert judgment was then
775 applied to assess whether site-specific conditions — including thermal cycling, operating
776 pressures, system water chemistry, and climate — warranted any deviation from standard
777 manufacturer guidance. This dual-input methodology produces useful life estimates that
778 are grounded in factual product data and validated by professional engineering
779 experience.

780 **Q. How are the Company's Production assets categorized for useful life purposes?**

781 A. The Company organizes its production plant assets into three broad useful life tiers — 10
782 years, 25 years, and 50 years — reflecting the materially different service lives of the
783 underlying components. This tiered approach avoids the distortions of a single composite
784 depreciation rate and aligns cost recovery with actual asset consumption.

785 The Production plant assets — which include the Energy Centre heating and cooling
786 modules and the Temporary and Permanent Energy Centers — are composed of three
787 types of components: structures, primary mechanical plant equipment, and miscellaneous
788 devices. Based on my experience operating and managing district energy, power, and
789 thermal systems over more than 25 years, I have assigned the following individual useful
790 lives to each component type.

791 **Q. Please identify the production assets assigned a 50-year useful life and explain the**
792 **basis for that assignment.**

793 A. Plant structures are assigned a useful life of 50 years. In my experience, purpose-built
794 utility plant structures are designed for long-term, continuous-duty service and are
795 capable of providing reliable service over a 50-year horizon with routine maintenance.
796 The following assets are assigned a 50-year useful life, consistent with their character as
797 structural or long-lived civil/mechanical elements that are integral to the facility and not
798 subject to routine replacement:

- 799 • Plant heating equipment structures: NG Structure, boiler breeching, gas trains
- 800 • Plant cooling equipment structures
- 801 • Building, building structures and improvements

802 These assets are predominantly structural, civil, or long-lived mechanical in
803 character. Manufacturer guidance support that well-maintained structures and
804 permanently integrated infrastructure of this type have service lives of 50 years or more.
805 A 50-year useful life is reasonable and consistent with industry practice for similar
806 district energy systems.

807 See Corix Exhibit 6.4 Asset Life, which provides Asset and Depreciation Categories
808 details.

809 **Q. Please identify the production assets assigned a 25-year useful life.**

810 A. Primary active mechanical equipment — including gas-fired boilers, chillers, and thermal
811 plant equipment — is assigned a useful life of 25 years. These assets are subject to
812 regular thermal cycling and periodic major maintenance events, but are capable of

813 sustained reliable operation over a 25-year horizon when properly maintained. This is
814 consistent with my operational experience across comparable thermal energy systems.

815 The following assets are assigned a 25-year useful life, consistent with their classification
816 as major mechanical equipment that is subject to wear and periodic replacement but is not
817 considered short-lived instrumentation or electronics:

- 818 • Major heating plant equipment (e.g., industrial boilers, pumps, PRVs, and similar
819 mechanical components)
- 820 • Major cooling plant equipment (e.g., chillers, cooling towers, pumps, filters, and
821 related mechanical systems)
- 822 • Thermal plant equipment (e.g., ventilation fans, louvers, and other major equipment
823 items)

824 A 25-year useful life is supported by manufacturer product data for the specific
825 brands and models installed and is consistent with the expert engineering judgment in
826 Corix regarding expected service life for major rotating equipment and primary
827 mechanical systems in a well-maintained district energy environment.

828 See Corix Exhibit 6.4 Asset Life, which provides Asset and Depreciation Categories
829 details.

830 **Q. Please identify the plant assets assigned a 10-year useful life.**

831 A. Miscellaneous devices, controls, sensors, and site works components are assigned a
832 useful life of 10 years, reflecting the faster rate of functional degradation and
833 technological obsolescence that applies to electronic and instrumentation assets relative
834 to structural or mechanical plant.

835 The following assets are assigned a 10-year useful life, consistent with their
836 classification as instrumentation, metering devices, controls, and specialty components
837 that are subject to technological obsolescence, electronic degradation, or higher wear
838 rates under continuous service conditions:

- 839 • Heating plant devices and instrumentation (e.g., meters, transmitters, flowmeters, and
840 similar devices).
- 841 • Cooling plant devices and monitoring/instrumentation systems.
- 842 • Miscellaneous thermal plant devices (including controls electronics and wiring, and
843 other smaller devices).
- 844 • Plant siteworks.

845 A 10-year useful life for instrumentation, control devices, and electronic
846 components reflects both manufacturer design-life expectations. Electronic and precision
847 measurement equipment requires periodic replacement due to component aging,
848 calibration drift, firmware and software obsolescence, and the operational demands of
849 continuous service in a thermal energy environment.

850 See Corix Exhibit 6.4 Asset Useful Life, which provides Asset and Depreciation
851 Categories details.

852 **Q. What expected service lives are assigned to the primary Distribution plant**
853 **groupings?**

854 A. Distribution plant items included in the asset life list consist primarily of DPS with an
855 expected useful life of 50 years and ETS components with the following expected lives:

- 856 • Meters and related measurement/control devices (e.g., energy calculators, meters,
857 PLC and sensors): 10 years.

- 858 • Heat exchanger installations on customers' premises and related
859 valves/fittings/control valves: 25 years.
- 860 • ETS structural and piping components (miscellaneous structure and piping): 50 years.
- 861 **Q. How does the Company's useful life framework support long-term planning and**
862 **prudent asset management?**
- 863 **A.** The Company's component-level useful life framework supports prudent utility practice
864 in three ways. First, it matches depreciation expense to service life, ensuring each
865 component is depreciated over a period consistent with its expected useful life and
866 reducing the risk of mismatched cost recovery. Second, it improves rate base
867 measurement, so that accumulated depreciation better reflects the remaining service value
868 of the plant components included in rate base. Third, it supports long-term reinvestment
869 planning by aligning expected replacement cycles with future sustainment needs.
870 Together, these features make the Company's depreciation structure transparent, accurate,
871 and defensible for ratemaking purposes.

872 **VII. OPERATION AND MAINTENANCE**

- 873 **Q. What is the purpose of this section of your testimony?**
- 874 **A.** The purpose of this section is to describe the Operation and Maintenance ("O&M")
875 expenses included in the Company's revenue requirement for the Test Year ending July
876 31, 2027. Specifically, I will explain the composition of the O&M cost forecast reflected
877 in Schedule 12 – Operation & Maintenance Expenses of the Utah City District Energy
878 Utility 2026–2027 Revenue Requirements and Rates Application, as well as the
879 underlying assumptions and methodologies supporting those estimates.

880

881 **Q. How is Schedule 12 structured, and what does it capture?**

882 **A.** Schedule 12 – Operation & Maintenance Expenses presents all O&M cost line items as
883 forecast figures, expressed in dollars. The schedule is the primary output table for O&M
884 costs as used in this rate application. It is directly linked to, and populated by, the model's
885 OPEX Forecast engine. The schedule covers all recurring operating costs including direct
886 labor FTE (operations and maintenance), benefits, short-term incentive plan (STIP) costs,
887 materials, chemical treatment, third-party service contracts, and overhead allocations.

888 **Q. What are the major components of O&M labor costs included in Schedule 12?**

889 **A.** The direct labor components included in Schedule 12 consist of: (1) Operation
890 Supervision and Labor (Salaries and Wages); (2) Maintenance Supervision and Labor;
891 (3) Overtime (Operations and Maintenance); (4) Benefits and Pensions; and (5) Short-
892 Term Incentive Plan (STIP) costs. Consistent with Corix's regulatory policy, the
893 Company does not seek recovery of Long-Term Incentive Plan (LTIP) costs from
894 regulated utilities through expense or capitalized cost. Labor costs are carefully
895 controlled with FTE positions filled in direct coordination with the timing of assets and
896 needs.

897 The total Direct Labor cost for the Utah project for the Test Year, as reflected in
898 Schedule 12, are \$361,004. This ramps to higher levels in subsequent years consistent
899 with planned system growth and CPI-based escalation assumptions embedded in the
900 model's Drivers tab.

901 See Corix Exhibit 6.3 Expenditures, which provides Operational Expenditures
902 details.

903

904 **Q. How were the non-labor maintenance costs estimated?**

905 **A.** Non-labor maintenance costs were developed using the “Maintenance cost estimates
906 % .xlsx” analysis, which applied a bottom-up, equipment-by-equipment methodology
907 benchmarked against comparable Corix district energy systems. The key assumptions
908 used were as follows:

- 909 • Maintenance Costs - \$19,051
- 910 • Office Rental - \$57,017
- 911 • Miscellaneous, including Chemicals - \$51,458

912 Total O&M (including labor) for the test year - \$488,530

913 See Corix Exhibit 6.3: Expenditures, which provides Operational Expenditures details.
914 Additional details can be found in the Company’s supplemental testimony submissions.

915 In addition to the itemized costs above, the Company has included an O&M call-
916 out support and minor spare parts provision equivalent to 15% of the subtotal O&M
917 costs, to address unplanned reactive maintenance requirements. The maintenance cost as
918 a percentage of Gross Plant in Service was also calculated for extrapolation purposes,
919 arriving at approximately 0.27% of gross plant for the initial operating period.

920 **Q. Does the Company apply an escalation factor to future O&M costs?**

921 **A.** Yes. The Drivers and F&U Forecast tab serves as the core forecast driver engine for
922 escalation factors and operational drivers, including CPI and commodity escalation
923 indices applied to the OPEX forecast across all periods. Changes to escalation
924 assumptions are made in the O&M Inputs or Drivers tab, and the OPEX Forecast tab
925 reflects the resulting escalated totals. The Company has applied a consistent, annually

926 compounded escalation rate to non-labor O&M costs, consistent with reasonable utility
927 planning practice and aligned with CPI-based indices.

928 **Q. How is the O&M program designed to ensure prudent operations and system**
929 **reliability?**

930 **A.** The Company's O&M program is designed to maintain the district energy system —
931 including the Interim Energy Centre #1 (IEC-1), DPS, and ETS — in a safe, reliable, and
932 fully operational condition, consistent with good utility practice. The maintenance cost
933 estimates were developed by reference to Corix's operating experience at comparable
934 district energy facilities, including the Oval Village and Alexandra District Energy Utility
935 systems in British Columbia, and supplemented by contractor-sourced benchmarks. The
936 15% call-out and spare parts provision reflects the Company's prudent recognition that,
937 for a newly commissioned system, reactive maintenance may be required during the early
938 operating period as the system is optimized and stabilized.

939 **Q. Does the Company seek recovery of all O&M costs through rates?**

940 **A.** The Company seeks recovery of all prudently incurred O&M costs reflected in Schedule
941 12, with the exception of Long-Term Incentive Plan costs. Corix does not seek recovery
942 of Long-Term Incentive Plan costs from regulated utilities through expense or capitalized
943 cost. ² All remaining cost categories included in Schedule 12 are necessary to support
944 safe and reliable utility service to customers during the Test Year.

945 **VIII. CONCLUSION**

946 **Q. Please summarize your testimony.**

947 **A.** This testimony provides a comprehensive overview of the project development, including
948 site preparation, planning, construction, capital and operational expenditures, as well as

949 asset life assumptions for Phase 1 of the Utah City District Energy Utility (UCDEU)
950 System. The testimony concludes with my professional assessment that these schedules
951 are reasonable, appropriate, and meet the necessary requirements for regulatory review.

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

953 **A. Yes.**