

**ILLINOIS COMMERCE COMMISSION**

**DOCKET NO. 12-0598**

**DIRECT TESTIMONY ON REHEARING**

**OF**

**JEFFREY V. HACKMAN, P.E.**

**Submitted on Behalf**

**Of**

**AMEREN TRANSMISSION COMPANY OF ILLINOIS**

**November 13, 2013**

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7   **I.    INTRODUCTION**

8   **Q.    Please state your name, business address and current position.**

9   **A.    My name is Jeffrey V. Hackman. My current position is Senior Director of Transmission**  
10 **Operations and Project Management for Ameren Services Company (Ameren Services), located**  
11 **at 1901 Chouteau Avenue, St. Louis, Missouri 63166.**

12 **Q.    Are you the same Jeffrey V. Hackman who previously sponsored testimony in this**  
13 **proceeding?**

14 **A.    Yes. I sponsored direct and rebuttal testimony on behalf of Ameren Transmission**  
15 **Company of Illinois (ATXI) in the initial phase of this proceeding.**

16 **II.   PURPOSE AND SCOPE**

17 **Q.    What is the purpose of your direct testimony on rehearing?**

18 **A.    My testimony explains three points:**

- 19                                   • ATXI must install the Project's substation equipment at the locations it proposes  
20                                   in Ipava, Kansas, Sidney, Rising, Pana and Mt. Zion, Illinois; and
- 21                                   • a 345 kV transmission line route connecting through Kincaid, Illinois would cause  
22                                   operational and maintenance issues that ATXI's Pawnee-Pana and Pana-Mt. Zion  
23                                   routes would not;

- 24           • while ATXI *can* construct parallel transmission lines for the Meredosia-Pawnee  
25           portion of the route (and at other locations), the Illinois Commerce Commission  
26           (Commission) should be aware that there is a tradeoff of risks and benefits  
27           associated with paralleling transmission lines; whether to parallel lines should be  
28           determined on a case-by-case basis and should not be a de facto standard rule.

29   **Q.     What is the status of the Illinois Rivers Project on rehearing?**

30   **A.**     In its August 20, 2013 Final Order, the Commission granted a Certificate of Public  
31   Convenience and Necessity (Certificate) for ATXI's proposed routes from River to Quincy,  
32   Quincy to Meredosia, Meredosia to Ipava, Meredosia to Pawnee, the Piatt/Macon County Line to  
33   Kansas, and Kansas to the Indiana Stateline.

34           The Commission excluded the Pawnee-Pana and Pana-Mt. Zion transmission line  
35   portions of the Illinois Rivers Project (Project) because it found the record lacked evidence those  
36   routes were the least-cost routes relative to one mentioned by Staff which would connect Kincaid  
37   to Mt. Zion. (Order, 83-84.)

38           The Commission also did not approve construction of substation facilities at Ipava,  
39   Kansas, Sidney, and Rising due to a perceived lack of evidence that ATXI required additional  
40   space outside of the existing Ameren Illinois Company (AIC) substation development at those  
41   locations to accommodate the Project's substation facilities. (Order 55, 120-21, 129.)

42           ATXI requested rehearing so that the Commission could consider additional evidence  
43   concerning the routes for the two transmission line segments that were not approved, Pawnee to  
44   Pana and Pana to Mt. Zion, as well as additional evidence concerning the sizing and location of  
45   the remaining substations. The Commission granted ATXI's rehearing request. The  
46   Commission also granted rehearing on the transmission line route segments from Meredosia-  
47   Pawnee and Mt. Zion-Kansas.

48 **Q. What does your testimony address?**

49 **A.** First, I address all of the substations at issue on rehearing. My testimony explains that  
50 there is not enough space provided by the current equipment layouts at the existing AIC  
51 substations to accommodate the Project's substation facilities and that the existing equipment at  
52 those sites cannot be modified or expanded to accommodate the Project's 345 kV transmission  
53 facilities. Next, I address the Pawnee to Mt. Zion routes and the Kincaid alternative. My  
54 testimony on rehearing explains why a Kincaid to Mt. Zion route would have more operational  
55 and maintenance issues. I also explain where the Pana and Mt. Zion substations, which the  
56 Commission excluded from the Certificate as a consequence of its conclusions related to the  
57 Pawnee to Mt. Zion portions of the Project, should be located. Finally, I address the Meredosia  
58 to Pawnee route and the operational problems and risks associated with parallel facilities. ATXI  
59 witness Mr. Dennis D. Kramer also addresses some of those issues further, in his testimony.

60 **Q. Are you sponsoring any exhibits with your rebuttal testimony?**

61 **A.** Yes. I am sponsoring the following exhibits:

- 62 • ATXI Exhibit 2.1 (RH) – Electrical scale drawing of existing AIC Ipava  
63 substation with ATXI Ipava facilities overlay;
- 64 • ATXI Exhibit 2.2 (RH) – Satellite map showing boundary of AIC Ipava  
65 substation and new land requirement at Ipava;
- 66 • ATXI Exhibit 2.3 (RH) – Electrical and topographical drawing of proposed ATXI  
67 Ipava substation on ATXI-owned land;
- 68 • ATXI Exhibit 2.4 (RH) – Electrical scale drawing of existing Kansas substation  
69 with ATXI facilities overlay;
- 70 • ATXI Exhibit 2.5 (RH) – Satellite map showing boundary of AIC substation and  
71 new land requirement at Kansas;

- 72 • ATXI Exhibit 2.6 (RH) – Electrical scale drawing of existing Sidney substation  
73 with ATXI facilities overlay;
- 74 • ATXI Exhibit 2.7 (RH) – Satellite map showing boundary of AIC substation and  
75 new land requirement at Sidney;
- 76 • ATXI Exhibit 2.8 (RH) – Electrical scale drawing, with topographic detail, of  
77 existing Rising substation with ATXI facilities overlay;
- 78 • ATXI Exhibit 2.9 (RH) – Satellite map showing proposed development of Rising  
79 substation, including parcel for relocated pipeline; and
- 80 • ATXI Exhibit 2.10 (RH) – Location of Mt. Zion substation (ATXI Ex. 4.2 (Part  
81 67 of 100)).

82 **Q. Are you familiar with the history of this proceeding prior to rehearing?**

83 **A.** Yes. On November 7, 2012, ATXI filed with the Commission a petition seeking a  
84 Certificate pursuant to Section 8-406.1 of the Public Utilities Act, 220 ILCS 5/8-406.1. ATXI  
85 asked the Commission to authorize ATXI to construct, operate, and maintain approximately 375  
86 miles of 345 kV electric transmission line, sectionalized by nine new or expanded substations,  
87 generally extending east across the State of Illinois. ATXI also asked the Commission to  
88 authorize ATXI to construct, operate, and maintain the nine new or expanded substations. The  
89 transmission line and related substation facilities collectively constitute the Illinois Rivers  
90 Project. ATXI explained in its petition and in the evidence it presented in the pre-rehearing  
91 phase of this proceeding that one of the main objectives of the Project is to provide additional  
92 connectivity across the electrical transmission grid to reduce congestion and enable access to a  
93 broader array of resources by loads in Illinois and elsewhere in the Midcontinent Independent  
94 System Operator (MISO) region.

95           The Commission’s Staff and numerous intervening parties—mostly landowners along  
96 proposed routes for the Project—participated in the proceeding and presented evidence, to  
97 varying degrees, related to proposed routes and the need for the Project.

98           On August 20, 2013, the Commission issued a Final Order and Certificate. In that order,  
99 “the Commission agree[d] that a 345 kV transmission line is necessary to address transmission  
100 and reliability needs in an efficient and equitable manner and will benefit the development of a  
101 competitive electricity market.” (Order, 14.) The Commission also generally found that the  
102 record of proceeding demonstrated that the Project proposed by ATXI was the “best approach to  
103 meet the needs at hand.” (Order, 14.) However, as explained, the Commission did not authorize  
104 ATXI to construct the entire Project. Rather, the Commission approved a Certificate that  
105 excludes two segments of the proposed 345 kV transmission line—those extending from a  
106 substation in Pawnee to one in Pana, and from a substation in Pana to one in Mt. Zion. (Order,  
107 83-84.) Consequently, the Certificate also excludes the Pana and Mt. Zion substations, although  
108 the Order found that the Mt. Zion substation was needed and simply did not approve its location.  
109 (Order, 83-84, 86.) As explained, the Certificate also excludes four additional of the nine  
110 substations that are part of the Project—those at Ipava, Kansas, Sidney, and Rising. (Order, 55,  
111 120-21, 129.) The Commission did not question the need for those substations. Rather, the  
112 Commission declined to approve construction of them because it questioned whether existing  
113 AIC substation sites at those locations could accommodate the Project’s substation equipment.

114           In October 2013, the Commission reopened this proceeding to receive additional  
115 evidence regarding the Pawnee-Pana and Pana-Mt. Zion transmission line route segments and  
116 the six substation locations it did not approve in its August 20, 2013 Order. The Commission

117 also reopened the proceeding to receive additional evidence regarding the routes it approved for  
118 the Meredosia to Pawnee and Mt. Zion to Kansas portions of the Project.

119 **III. PROPOSED SUBSTATION SITES**

120 **Q. Why does the Project include nine substations?**

121 **A.** Substations are necessary to terminate the Project's circuits and connect them to the  
122 existing bulk electric system. Substations also sectionalize the Project's approximately 400  
123 miles of transmission line.

124 **Q. What substation equipment does the Project require?**

125 **A.** The Project specifically requires seven 345 kV breaker-and-a-half substations and two  
126 345 kV ring bus substations that must be expandable to a breaker-and-a-half development. The  
127 Project also includes six new 345/138 kV transformers. Mr. Kramer explains in his direct  
128 testimony on rehearing why ATXI requires breaker-and-a-half, or expandable to breaker-and-a-  
129 half, configurations. Ameren Services Transmission Planning Engineers, under the direction of  
130 Mr. Kramer and working with MISO and other stakeholders, determined that the Project required  
131 this substation equipment.

132 **Q. What do you mean by "sectionalize"?**

133 **A.** Simply, "sectionalizing" involves the installation of one, or more, circuit breakers in a  
134 transmission line to break it up into smaller lengths. This is done for several reasons, but two are  
135 most important: fault detection/isolation and improved reliability. If you were to have a line of  
136 400 miles in length with circuit breakers only at the ends, a fault ("short circuit") anywhere along  
137 the line would necessarily result in the entire line being de-energized and put out of service. If

138 we instead, for example, installed circuit breakers every 50 miles, thus providing 8 such sections,  
139 a fault at any point would only cause one 50 mile section to be de-energized. The remaining 350  
140 miles could remain energized. As an analogy, concrete pavement on a 5 mile long road (or even  
141 a driveway) is rarely one continuous piece of concrete. Rather, there are joints (or gaps) installed  
142 (as recommended by the Federal Highway Administration to control cracking, and, in the event  
143 cracking does occur, to allow for a manageable “slab” to be replaced.

144 The other benefit of sectionalizing relates to the reliability of the 345/138 kV  
145 transformers that are part of the Project and that provide local area reliability benefits. In the  
146 example above, with the non-sectionalized 400 mile continuous line, all of the transformers  
147 would be out-of-service when any part of the line was out of service. However, if we  
148 sectionalize the line with circuit breakers into 50 mile sections, and only one transformer was  
149 allowed to be supplied by each such section, then a fault would only remove one transformer  
150 from service, allowing the others to continue to provide reliability.

151 **Q. What are the general locations for each of the Project’s nine substations?**

152 **A.** They are Quincy, Meredosia, Ipava, Pawnee, Pana, Mt. Zion, Kansas, Sidney, and Rising,  
153 Illinois.

154 **Q. Who designed the substations?**

155 **A.** Ameren Services Substation Design Engineers working under my direction. The  
156 substations are in various stages of design, but all have completed physical layout designs.

157 **Q. How did the Substation Design Engineers design the physical layouts for the**  
158 **substations for those locations?**

159 A. Transmission Planning Engineers reporting to Mr. Kramer provided the Substation  
160 Design Engineers with one-line schematic diagrams of the facilities that are required at each  
161 substation. These are based on a planning determination of the current equipment, as well as the  
162 number of future additional connections expected to be made to the substation bus. The total  
163 number of current and future connections dictates the ultimate configuration of the substation.  
164 As Mr. Kramer explains, ATXI is using breaker-and-a-half, or ring bus expandable to breaker-  
165 and-a-half, substation configurations. Using those diagrams and the standard design layouts for  
166 each piece of required equipment, the Substation Design Engineers designed a reliable and  
167 economical arrangement of the required equipment based on engineering standards, Ameren  
168 Services-specific standard designs, and good utility practice. This arrangement dictated the  
169 space required for each substation. The Substation Design Engineers then incorporated more  
170 details into their designs as they considered the many other factors that influence the ultimate  
171 design of a substation, including soil characteristics, equipment and material specifications.

172 **Q. How does ATXI plan 345 kV transmission substations for their future conversion**  
173 **from a ring bus configuration to a breaker-and-a-half arrangement?**

174 A. As Mr. Kramer also addresses, transmission planners must determine the total number of  
175 current and future connections, which dictates the ultimate configuration of the substation. In  
176 some cases, ATXI intends to install ring buses that can be expanded or converted to breaker-and-  
177 a-half. In that case, the amount of additional physical space needed to eventually convert the  
178 interim ring bus configuration into a breaker-and-a-half configuration must be determined.  
179 Because a breaker-and-a-half configuration uses three circuit breakers for every two transmission  
180 elements (lines or transformers), this requires additional physical space compared to other bus

181 configurations. Finally, the physical arrangement of the initially installed substation equipment  
182 (circuit breakers, control houses, cables, etc.) is reviewed to ensure that it can be easily and  
183 economically electrically converted from the initial ring bus configuration into a future breaker-  
184 and-a-half configuration.

185 **Q. Did the Commission's Order authorize ATXI to construct substations at any of the**  
186 **locations you identified?**

187 **A.** Yes. It authorizes ATXI to construct: (1) a new substation site near Quincy on ATXI-  
188 acquired land adjacent to existing AIC 138 kV transmission circuits there; (2) new 345 kV  
189 equipment, also on ATXI-acquired land, immediately adjacent and connecting to the existing  
190 AIC Meredosia substation facilities; and (3) a new substation site near Pawnee on property  
191 approximately four thousand feet from the existing AIC substation site due to evidence of mine  
192 subsidence at the existing AIC Pawnee site and surrounding area. (Order, 24, 41, 78.) Below, I  
193 discuss each of the six substation site locations at which ATXI is not currently authorized to  
194 construct substation facilities.

195 **A. Ipava Substation Site**

196 **Q. What are ATXI Exhibits 2.1 (RH), 2.2 (RH), and 2.3 (RH)?**

197 **A.** ATXI Exhibit 2.1 (RH) is a scale drawing showing the electrical facilities of the existing  
198 AIC substation at Ipava with the equipment that ATXI proposes to install, if it were installed  
199 immediately adjacent to the Ipava substation. Specifically, ATXI plans to install a 345 kV ring  
200 bus arranged in a manner to allow expansion to breaker-and-a-half, a 345/138 transformer, a 138  
201 kV bus, and associated equipment. ATXI Exhibit 2.2 (RH) shows the land that would need to be  
202 purchased to contain the new ATXI facilities. ATXI Exhibit 2.3 (RH) shows the electrical

203 layout of the Project facilities to be on the ATXI-owned land, as proposed by ATXI. ATXI  
204 Exhibit 2.3 (RH) also shows the location of ATXI's proposed site relative to the AIC site at  
205 Ipava.

206 **Q. Does ATXI own the real estate where it intends to build a new substation?**

207 **A.** Yes. In November of 2012, ATXI purchased approximately 154 acres for the purpose of  
208 constructing the Project's Ipava substation. ATXI Exhibit 2.3 (RH) shows the boundaries of the  
209 land ATXI owns.

210 **Q. Why does ATXI need 154 acres for the Project's substation equipment at Ipava?**

211 **A.** ATXI purchased the property to accommodate the new substation development and the  
212 transmission line rights-of-way to and from the substation. ATXI will not need all 154 acres for  
213 the Project. However, ATXI purchased complete parcels from some landowners because they  
214 were only interested in selling complete parcels, as is often the case. Whatever land ATXI does  
215 not need after it completes the final substation design will be sold, leased, or otherwise put to  
216 productive use.

217 **Q. When it planned the Project, did ATXI evaluate whether it could install the**  
218 **Project's substation equipment immediately adjacent to the existing AIC substation**  
219 **equipment at Ipava?**

220 **A.** Yes. As described earlier, the Transmission Planning Engineers provided the Substation  
221 Design Engineers a one-line schematic diagram of the facilities needed at Ipava, which the  
222 Substation Design Engineers developed into physical arrangement layout drawings. The  
223 Substation Design Engineers then overlaid that design on top of a drawing of the existing AIC

224 Ipava facility. They then reviewed the geographical and topographical features of the existing  
225 site to evaluate whether development, if adjacent to the existing facilities, was possible.

226 **Q. Why does ATXI need to build a new substation at Ipava when there is an existing**  
227 **substation a half mile away?**

228 **A.** The last step of the evaluation I just described—geographical review of the existing AIC  
229 site—revealed that installing the new ATXI facilities immediately adjacent to the existing AIC  
230 facilities would require the new ATXI facilities to be in a major watershed area. The new ATXI  
231 facilities also would have been very close to a road and a residence. ATXI Exhibits 2.1 (RH)  
232 and 2.2 (RH) show this. For these reasons, it is not practical to install the new ATXI facilities  
233 adjacent to the existing AIC facilities at Ipava. Thus, a new site was identified through the  
234 process described in my direct testimony prior to rehearing.

235 **Q. What is the cost of installing the Ipava substation equipment on the site you**  
236 **identified?**

237 **A.** The mean cost estimate for the new development at Ipava is \$25,733,905.

238 **Q. What did the Commission conclude regarding the proposed Ipava substation?**

239 **A.** It concluded that the existing AIC Ipava substation is sufficiently sized to accommodate  
240 the Project's substation equipment:

241 The Commission finds based on the evidence presented in this proceeding that  
242 there is insufficient evidence at this time to authorize the construction of a  
243 new substation at Ipava, Illinois. The Commission finds, however, that based  
244 on the evidence presented by Staff, the current substation located at Ipava,  
245 Illinois is sufficiently sized and capable of expansion such that it could handle  
246 the additional facilities required by the this portion of the Illinois Rivers  
247 Project.

248 (Order, 55.)

249 **Q. Do you agree “the current substation located at Ipava is sufficiently sized...such that**  
250 **it could handle the additional facilities required by this portion of the Project,” as the**  
251 **Commission found?**

252 **A.** I do not understand whether the Commission is referring to the real estate or the  
253 equipment at the existing AIC site when it says “sufficiently sized.” Either way, I disagree with  
254 the Commission’s conclusion which may have been premised on inadequate information. AIC’s  
255 Ipava real estate cannot house the Project equipment ATXI plans to install for the reasons I  
256 discussed. AIC’s substation equipment at Ipava cannot accommodate the Project equipment  
257 because the existing property is not large enough for the expansion to a breaker-and-a-half  
258 configuration and the adjoining property that would be needed is in the watercourse. As I noted,  
259 and as Mr. Kramer explains in his direct testimony on rehearing, this configuration is needed for  
260 the Project at Ipava.

261 **Q. Do you agree “the current substation located at Ipava, Illinois is . . . capable of**  
262 **expansion such that it could handle the additional facilities required by this portion of the**  
263 **Illinois Rivers Project,” as the Commission found?**

264 **A.** Again, I do not understand whether the Commission means the real estate is “capable of  
265 expansion,” or the existing equipment is. Regardless, neither can be “expanded” to  
266 accommodate the Project’s Ipava substation equipment for the reasons I discussed. AIC’s Ipava  
267 substation real estate is just too small to house all the facilities needed for the ultimate ATXI  
268 Ipava development identified by the Transmission Planning Engineers.

269 **Q. Should the Commission authorize ATXI to construct the Project’s Ipava substation**  
270 **facilities at the site ATXI proposes?**

271 A. Yes. ATXI needs to install certain substation equipment at Ipava as part of the Project.  
272 As I've explained, those facilities do not exist at Ipava, and the real estate for the existing  
273 substation does not offer enough space to accommodate those facilities. In fact, if ATXI  
274 constructed the Project's substation facilities next to the AIC substation facilities at Ipava, it  
275 would have to construct them in a watershed area and right next to a road and a house.  
276 Obviously, building a substation in the midst of a watershed creates environmental, operational,  
277 and maintenance issues. The Commission shouldn't order ATXI to do that. Instead, it should  
278 authorize ATXI to construct the needed facilities at the location ATXI proposes for Ipava.

279 **B. Kansas Substation Site**

280 **Q. What are ATXI Exhibits 2.4 (RH) and 2.5 (RH)?**

281 A. ATXI Exhibit 2.4 (RH) is a scale drawing of the existing AIC Kansas substation along  
282 with the substation equipment that ATXI plans to install at Kansas as part of the Project, overlaid  
283 as ATXI intends to construct it. Specifically, ATXI plans to install a 345 kV breaker-and-a-half  
284 bus, a second 345/138 kV transformer, 138 kV bus, and associated equipment. ATXI proposes  
285 to install the equipment immediately adjacent to the existing AIC substation site at Kansas.  
286 ATXI Exhibit 2.5 (RH) shows the property ATXI needs to accommodate its new equipment.

287 **Q. Does ATXI own the real estate where it intends to build the Kansas substation?**

288 A. Yes. In November of 2012, ATXI purchased approximately 30 acres in two tracts,  
289 immediately adjacent to the existing AIC substation parcel, for the purpose of installing the  
290 Kansas substation equipment. ATXI Exhibit 2.4 (RH) also shows the boundaries of the land  
291 ATXI owns.

292 **Q. Why does ATXI need 30 acres for the substation equipment at Kansas?**

293 **A.** Similar to the design process for the Ipava substation, the Transmission Planning  
294 Engineers provided a one-line schematic diagram of the facilities needed at Kansas. The  
295 Substation Design Engineers then developed a physical arrangement layout drawing based on  
296 those needs. They overlaid that design on top of a drawing of the existing AIC Kansas facility.  
297 Next, they evaluated the existing AIC site's geography and topography. ATXI acquired 30 acres  
298 to accommodate its new equipment that would not fit on the existing site.

299 **Q. Does AIC own the existing substation equipment?**

300 **A.** Yes.

301 **Q. Who will own the Project equipment ATXI installs at Kansas?**

302 **A.** AIC will continue to own its existing equipment. ATXI will own the equipment  
303 associated with the Project.

304 **Q. Why does ATXI need to build substation facilities at Kansas when there is an**  
305 **existing substation immediately adjacent to the new substation site?**

306 **A.** The AIC substation does not have the capability required as part of the Project. In order  
307 to get that capability, ATXI must install the new breaker-and-a-half substation facilities.

308 **Q. What did the Commission conclude regarding the proposed Kansas substation?**

309 **A.** It concluded:

310 With regard to ATXI's proposed construction of a new substation adjacent to  
311 AIC's existing Kansas substation, the Commission understands the issue to be  
312 simply whether space exists in the existing substation to accommodate new  
313 equipment. This question should have been resolved through discovery  
314 because whether sufficient space exists should be easily discernible. Why this  
315 has not occurred here is uncertain. Instead, the Commission is faced with

316 ATXI's position that more space is necessary and Staff's assertion that  
317 sufficient space is available now. Perhaps had more time been available to  
318 pursue this issue in discovery and otherwise consider such details, this issue  
319 could have been avoided. In the interest of choosing the least-cost option for  
320 this Project, the Commission declines to grant ATXI approval to construct an  
321 additional substation where one already exists. Should new or additional  
322 evidence be presented to the Commission on rehearing or in a separate  
323 proceeding demonstrating the necessity of such a substation, the Commission  
324 would revisit this issue.

325 (Order, 120-121.)

326 **Q. The Commission questioned whether “space exists in the existing substation to**  
327 **accommodate new equipment.” Does it?**

328 **A.** No. As shown on ATXI Exhibit 2.4 (RH), the new ATXI equipment will expand outside  
329 the AIC boundaries. And, AIC's existing equipment is inadequate for the needs of the Project.

330 **Q. Should the Commission authorize ATXI to construct the Project's Kansas**  
331 **substation facilities at the site ATXI proposes?**

332 **A.** Yes. ATXI already acquired property rights for 30 acres to install the equipment it needs  
333 at Kansas. The Commission should authorize ATXI to construct the necessary Project facilities  
334 there, adjacent to the existing facilities.

335 **C. Sidney Substation Site**

336 **Q. What are ATXI Exhibits 2.6 (RH) and 2.7 (RH)?**

337 **A.** ATXI Exhibit 2.6 (RH) is a scale drawing of the existing AIC Sidney substation along  
338 with the substation equipment that ATXI plans to install at Sidney as part of the Project, overlaid  
339 on the existing AIC substation as ATXI proposes to install it. Specifically, ATXI plans to install  
340 a 345 kV breaker-and-a-half bus, a second 345/138 kV transformer, a 138 kV bus, and associated  
341 equipment. ATXI Exhibit 2.7 (RH) shows the required adjacent property that is needed to

342 contain the new equipment that ATXI proposes to install. ATXI proposes to install the  
343 equipment immediately adjacent to, and as an expansion of, the existing AIC substation site at  
344 Sidney.

345 **Q. Does ATXI own the real estate where it intends to build the substation equipment?**

346 **A.** Yes. In November of 2012, ATXI purchased approximately 39 acres for the purpose of  
347 installing the Sidney substation equipment. ATXI Exhibit 2.6 (RH) shows the boundaries of the  
348 land ATXI owns.

349 **Q. Why does ATXI need 39 acres for the Project's substation equipment at Sidney?**

350 **A.** Similar to Ipava and Kansas, the Transmission Planning Engineers provided the one-line  
351 schematic diagram of the facilities needed at Sidney, which the Substation Design Engineers  
352 used to develop a physical arrangement layout drawing for the substation. They then overlaid  
353 that design on the top of a drafting of the existing facility and evaluated the geography and  
354 topography of the layout. That evaluation showed that there was real estate at the existing  
355 Sidney site for some, but not all, of the needed ATXI equipment. ATXI purchased the additional  
356 39 acres to accommodate the new equipment that would not fit on the existing site.

357 **Q. Does AIC own the existing substation equipment?**

358 **A.** Yes.

359 **Q. Who will own the Project equipment ATXI installs at Sidney?**

360 **A.** AIC will continue to own its existing equipment. ATXI will own the equipment  
361 associated with the Project.

362 **Q. When it planned the Project, did ATXI evaluate whether it could expand or modify**  
363 **the AIC existing substation equipment at Sidney to terminate the Project there?**

364 **A.** Yes. As described earlier, the new facilities that are required were arranged so that they  
365 could be integrated with the existing equipment. But, as mentioned related to the other sites, the  
366 existing AIC Sidney substation does not have the facilities required to terminate the Project's  
367 lines, nor does it have enough real estate to accommodate all of the new equipment.  
368 Notwithstanding that the ATXI Sidney substation equipment is new and ATXI purchased land to  
369 house that new equipment, the Sidney development, like Kansas, is effectively an “expansion”  
370 because the new ATXI equipment and the existing AIC equipment will be integrated.

371 **Q. What did the Commission conclude regarding the proposed Sidney substation?**

372 **A.** The Commission’s Order addressed ATXI’s proposed Sidney and Rising substations  
373 together. I discuss the Rising substation below. The Order states:

374 With regard to the construction of new substations adjacent to the existing  
375 substations in Sidney and Rising, the Commission understands the issue to be  
376 simply whether space exists in the existing substations to accommodate new  
377 equipment. This question should be resolved through discovery because  
378 whether sufficient space exists should be easily discernible. Why this has not  
379 occurred here is uncertain. Instead, the Commission is faced with ATXI's  
380 claims that it needs more space than is present in the existing substations and  
381 Staff's argument that sufficient space is available now. Pe(RH)aps had more  
382 time been available to pursue this issue in discovery and otherwise consider  
383 such details, this issue could have been avoided. In the interest of choosing  
384 the least-cost option for the Project, the Commission declines to grant ATXI  
385 approval to construct new substations when existing substations may serve the  
386 same purpose. Should new or additional evidence be presented to the  
387 Commission on rehearing or in a separate proceeding demonstrating the  
388 necessity of such substations, the Commission would be willing to revisit this  
389 issue.

390 (Order, 129.)

391 **Q. The Commission questioned whether “space exists in the existing substation to**  
392 **accommodate new equipment.” Does it?**

393 **A.** No. AIC does not own enough real estate to accommodate the Project’s Sidney  
394 substation equipment, as I described above. The new equipment requires more space.

395 **Q. Should the Commission authorize ATXI to construct the Project’s Sidney substation**  
396 **facilities at the site ATXI proposes?**

397 **A.** Yes. There is enough space at the existing AIC Sidney site for some, but not all, of the  
398 equipment needed for the Project. To install that equipment, ATXI needs more space. It already  
399 purchased 39 acres for that reason. The Commission should authorize ATXI to construct the  
400 necessary Project facilities on those acres.

401 **D. Rising Substation Site**

402 **Q. What are ATXI Exhibits 2.8 (RH) and 2.9 (RH)?**

403 **A.** ATXI Exhibit 2.8 (RH) is a scale drawing of the existing AIC Rising substation, along  
404 with the new substation equipment that ATXI plans to install at Rising as part of the Project,  
405 overlaid and arranged as ATXI proposes to install it. Specifically, ATXI plans to install a 345 kV  
406 ring bus expandable to breaker-and-a-half, and a 138 kV bus. ATXI Exhibit 2.9 (RH) shows the  
407 land parcel where ATXI proposes to install the Rising substation equipment. ATXI proposes to  
408 install its equipment immediately adjacent to, and as an expansion of, the existing AIC substation  
409 site at Rising.

410 **Q. Does AIC own the land on which the AIC substation equipment sits?**

411 **A.** Yes.

412 **Q. Who will own the Project equipment that ATXI installs at Rising?**

413 **A.** AIC will continue to own its existing equipment. ATXI will own the equipment  
414 associated with the Project.

415 **Q. When it planned the Project, did ATXI evaluate whether it could expand or modify**  
416 **the AIC existing substation equipment at Rising to terminate the Project there?**

417 **A.** Yes. As described earlier, the existing facilities do not have the capability required for  
418 the Project. Also as described earlier, the new facilities that are required for the Project were  
419 arranged to be integrated with the existing AIC equipment. Notwithstanding that the ATXI  
420 Rising substation equipment is new, the Rising development is effectively an “expansion” of the  
421 existing AIC equipment given that integration.

422 **Q. What did the Commission conclude regarding the proposed Rising substation?**

423 **A.** The Commission’s findings regarding the Rising substation are identical those regarding  
424 Sidney. (Order, 129.)

425 **Q. Should the Commission authorize ATXI to construct the Project’s Rising substation**  
426 **facilities at the site ATXI proposes?**

427 **A.** Yes. The existing AIC substation does not have the equipment necessary for the Project,  
428 even though there is enough real estate space at the existing AIC Rising site for that equipment.  
429 The Commission should authorize ATXI to install the necessary Project equipment at Rising on  
430 the existing AIC substation site.

431 **E. Pana Substation Site**

432 **Q. Where does ATXI propose to construct the Project's Pana substation facilities?**

433 **A.** Approximately 1 mile west of the existing AIC substation site.

434 **Q. Does ATXI own the real estate where it intends to build the substation equipment?**

435 **A.** Yes. In November of 2012, ATXI purchased approximately 152 acres, in two parcels, for  
436 the purpose of constructing the Pana substation.

437 **Q. Why does ATXI need 152 acres for the Project's substation equipment at Pana?**

438 **A.** ATXI purchased the property to accommodate the substation development and the  
439 transmission line rights-of-way to and from the substation. ATXI will not need all 152 acres for  
440 the Project. However, as is often the case, some landowners were only willing to sell complete  
441 parcels only. So, that is what ATXI purchased. Whatever land ATXI does not need after it  
442 completes the final design of the Pana substation will be sold, leased, or otherwise put to  
443 productive use.

444 **Q. When it planned the Project, did ATXI evaluate whether it could expand or modify**  
445 **the AIC existing substation equipment in Pana to terminate the Project there?**

446 **A.** Yes. The evaluation process for the Pana substation was similar to the process for the  
447 other substations that I described above. At Pana, however, we became aware of subsidence  
448 issues resulting from the existence of an early 20th century roof-and-pillar mine under the  
449 existing AIC site, and then changed course to identify a different, acceptable site for the Project  
450 equipment. The identical situation occurred related to the Pawnee substation site; the  
451 Commission recognized and approved that location.

452 **Q. What did the Commission conclude regarding the Pana substation?**

453 **A.** The Commission did not approve a route for the transmission line between Pawnee and  
454 Mt. Zion because of Staff's concern that connecting the Pawnee-Pana and Pana-Mt. Zion  
455 segments of the Project at Pana may not be the least-cost option relative to a connection through  
456 Kincaid. (Order, 83-84.) By default, the Commission did not approve the Pana substation site.

457 **Q. If the Commission approves a route through Pana, is the existing AIC substation**  
458 **site an appropriate location to terminate the lines of the Project?**

459 **A.** No. Like the existing AIC substation site at Pawnee, the existing AIC Pana site is located  
460 above an early 20th century roof-and-pillar mine and has shown evidence of mine subsidence.  
461 Staff witness Mr. Gregory Rockrohr agrees. He testified, "as at Pawnee, mine subsidence is  
462 occurring at AIC's existing Pana substation, so that ATXI's decision to terminate the Pawnee to  
463 Pana segment of its Illinois Rivers Project at a new [Pana] substation outside of the area of mine  
464 subsidence is logical." (ICC Staff Ex. 1.0R (Rockrohr Dir.), p. 37.) As I mentioned, the  
465 Commission's Order approved construction of substation equipment at Pawnee on a site separate  
466 from the existing AIC substation site due to evidence of mine subsidence at the existing AIC site.  
467 (Order 78.)

468 **Q. Will AIC have to relocate its Pana substation if ATXI does not construct the**  
469 **substation on a new site?**

470 **A.** Yes. The transmission equipment of AIC needs to be relocated away from the Pana  
471 substation site due to the mine subsidence at that site, and it cannot wait until the substation sinks  
472 into the ground to do so. If ATXI constructs a substation on a new site in Pana, the transmission  
473 equipment of both AIC and ATXI will be located there. But, if ATXI does not construct a

474 substation on a new site at Pana, AIC still will have to relocate its Pana substation facilities  
475 before mine subsidence can further jeopardize reliability. AIC would then need to rebuild its  
476 Pana substation on a new site, and the most preferred spot to accomplish that is the ATXI-owned  
477 parcel.

478 **Q. Should the Commission authorize ATXI to construct the Project's Pana substation**  
479 **facilities at the site ATXI proposes?**

480 **A.** The Commission should approve a route for the Project that connects through a  
481 substation in Pana. Therefore, it should authorize ATXI to install the Project's substation  
482 equipment at the site ATXI proposes in Pana. Due to mine subsidence, ATXI cannot use the  
483 existing AIC substation site in Pana to install the new equipment.

484 **F. Mt. Zion Substation Site**

485 **Q. Where does ATXI propose to construct the Project's Mt. Zion substation facilities?**

486 **A.** ATXI Exhibit 2.10 (RH) (which is ATXI Ex. 4.2 (Part 67 of 100)) shows the location of  
487 the proposed Mt. Zion substation.

488 **Q. Does ATXI own the real estate where it intends to build a new substation?**

489 **A.** Yes. In October of 2012, ATXI purchased approximately 41 acres southwest of the  
490 Village of Mt. Zion for the purpose of constructing the Mt. Zion substation.

491 **Q. Did Staff recommend a different location for the Mt. Zion substation during the**  
492 **initial phase of this proceeding?**

493 A. Yes. Staff proposed to locate the substation farther south, nearer a line between Pana and  
494 Kansas. In its October 2013 Kincaid proposal filing, Staff proposed preliminary and secondary  
495 locations for the substation.

496 **Q. What did the Commission conclude regarding the proposed Mt. Zion substation and**  
497 **its location?**

498 A. The Order states “The Commission agrees that a new substation in the Mt. Zion area is  
499 necessary . . . .” However, the Commission did not approve a location for that substation  
500 because it did not authorize construction of the transmission line coming into the substation from  
501 the west. The Order states:

502 exactly where that substation should be located is less certain. The record  
503 reflects that the new substation, wherever it is built, will include a 345/138 kV  
504 transformer; therefore, there will be at least one 138 kV transmission line  
505 emanating from the new Mt. Zion substation. Specifying the location of the  
506 substation based solely on the location of one of the connecting 345 kV lines  
507 (that being the line from Kansas) without knowing where other connecting  
508 transmission lines will be coming from (the aforementioned 138 kV line and  
509 the other 345 kV line from either Pawnee or Pana) would unreasonably  
510 restrict future efforts to site those other transmission lines. Therefore the  
511 Commission will not approve a particular location for a new Mt. Zion area  
512 substation at this time. The Commission recognizes that MISO engaged in  
513 significant planning prior to the initiation of this docket and acknowledges  
514 MISO's concerns about delay, but can not simply abdicate its authority and  
515 responsibility to MISO. Acceptance of the MISO process and results on blind  
516 faith would render the Commission's review a meaningless gesture.

517 (Order, 86.)

518 The Commission also only approved the route extending west from the existing AIC Kansas  
519 substation towards Mt. Zion to an imaginary point at the Macon and Piatt County borders:

520 Stopping the line at the Macon County and Piatt County border at this time  
521 will provide sufficient flexibility to resume the line along an appropriate route  
522 once the location of the new Mt. Zion substation is identified. That portion of

523 segment from the substation to the county border should be determined at the  
524 same time the substation location is determined.

525 (Order, 100.)

526 **Q. Can ATXI construct the line west from the Kansas substation to an imaginary**  
527 **point?**

528 **A.** Practically, no. While ATXI could construct to the imaginary point described in the  
529 Order, such a circuit would not actually connect to anything and thus would not be useful. As  
530 noted by the Commission's Chairman at a bench session, the Project must involve a complete  
531 path without “holes.”

532 **Q. Can ATXI construct the Mt. Zion substation south of ATXI’s proposed location, as**  
533 **proposed by Staff?**

534 **A.** Yes. But that does not mean it should. The Mt. Zion substation should be constructed  
535 where reliability and future development of the transmission system are best, and there is the  
536 least potential for operations and maintenance issues.

537 **Q. Which location presents the least potential for operations and maintenance issues—**  
538 **ATXI’s location or the southern location proposed by Staff?**

539 **A.** ATXI’s location.

540 **Q. Why?**

541 **A.** That location is closest to the load center (the Decatur metropolitan area) that drives the  
542 need for Mt. Zion as an “exit ramp” for the Project's transmission line. The ATXI location is  
543 closest to the existing grid supplying Decatur, yet keeps the Project facilities away from  
544 populated areas. While 138 kV circuits can be built from a site 3 miles away or further, voltage

545 support will not be as good since the amount of voltage drop is related to distance. Additionally,  
546 with subsequent future development, which would occur when these facilities reach their  
547 capacity, there will have to be a greater number of 138 kV circuits of longer lengths to get to the  
548 Decatur load center. The cost of these future circuits would be recovered from Ameren Illinois  
549 ratepayers, and will not be shared throughout the MISO region, as will occur with this Project.  
550 In general, it is good utility practice to get all substations, no matter the voltage, as close to the  
551 load center as possible.

552 **Q. What operational issues will ATXI face with a more southern location?**

553 **A.** Conceptually, even when structural design parameters are the same, 138 kV circuits are  
554 not as reliable as 345 kV circuits since the conductor-to-ground and conductor-to-structure  
555 distances are less, which means foreign objects can span the distance and create a fault. Outage  
556 rate data also shows that 138 kV circuits tend to be less reliable than 345 kV circuits. Therefore,  
557 the reliability is improved when the length of the 138 kV line is shortened.

558 **Q. Is there additional cost associated with locating the Mt. Zion substation farther**  
559 **south?**

560 **A.** Yes. However, in my opinion, the extra distances and corresponding rights-of-way  
561 needed for the 138 kV circuits needed to include all of Mt. Zion's capacity to the Decatur area  
562 will offset any reduced cost from a 345 kV line that does not extend as far north. Further, it is  
563 worth repeating that future development from a southerly Mt. Zion substation will be more  
564 expensive and will be paid for entirely by Illinois customers, rather than cost shared, as with the  
565 MVP portfolio.

566 **Q. What do you conclude regarding the proposed Mt. Zion substation?**

567 **A.** I agree with the Commission that there is a need for the substation. I disagree with the  
568 Order's reason for not picking a location, however. The Commission should approve the  
569 location that ATXI proposes. It presents less operational, maintenance and reliability issues, and  
570 is least-cost, relative to the location Staff proposes. Certainly, ATXI will review the evidence of  
571 those parties that address the Mt. Zion substation location, and if a different location can be  
572 justified, ATXI will address it in its rebuttal case.

573 **IV. PAWNEE TO MT. ZION CONNECTION**

574 **Q. Does the Order authorize ATXI to connect the Pawnee and Mt. Zion segments of**  
575 **the Project?**

576 **A.** It does not. ATXI proposed to connect the Pawnee and Mt. Zion segments with an  
577 intermediary connection at Pana. The Commission rejected the proposed routes from Pawnee to  
578 Pana and Pana to Mt. Zion out of concern that this configuration may not be the least cost means  
579 of constructing the Project. The Order granting rehearing directed Staff to propose a route  
580 connecting Pawnee and Mt. Zion through an intermediate connection in Kincaid. Staff has since  
581 submitted its list of landowners that may be affected by a Kincaid route proposal.

582 **Q. Has ATXI estimated the cost of a Pawnee-Kincaid-Mt. Zion route?**

583 **A.** Yes. The estimated per-mile baseline cost of the transmission line is approximately  
584 \$1.69 million. ATXI input that estimate into the risk-based contingency analysis model that I  
585 discussed in my direct testimony to derive an expected total cost and cost range for Staff's proposed  
586 Kincaid route. The base cost is estimated at \$74,371,000, with an expected mean of \$90,262,300.  
587 (The low-high range is \$77,389,700 to \$119,739,500.) This reflects the cost of a route coming out of

588 Kincaid, since Staff proposes using an existing line for that portion of a proposed route going into  
589 Kincaid. However, this estimate does not reflect additional, and potentially substational, costs due to  
590 the unusual conditions around the Kincaid substation, as decribed below.

591 **Q. Are the costs for any potential modifications at the Kincaid substation included in**  
592 **this cost estimate?**

593 **A.** No. This estimate is the cost to construct the new transmission line only. This cost  
594 estimate does not include any modifications that might be necessary at the Kincaid substation.  
595 Mr. Kramer addresses additional costs and other issues associated with a route through Kincaid.

596 **Q. Is it possible to connect the transmission line to the existing Kincaid substation?**

597 **A.** At this point, I am not certain that it would be possible to terminate a new transmission  
598 line at the Kincaid substation. The Kincaid substation site presents a unique challenge from a  
599 line design perspective. Further study and planning is necessary to determine whether a  
600 connection is possible, and, if so, the cost of the equipment required to overcome the design  
601 challenges.

602 **Q. Please summarize the design challenges associated with terminating a new line at**  
603 **the Kincaid substation.**

604 **A.** The land surrounding the substation is devoted to intensive use; there is a factory  
605 immediately to the south of the substation, and ash and other waste disposal ponds occupy the  
606 land to the north, east and west of the substation. Due to the location of the factory, new lines  
607 cannot enter the substation from the south. In order to enter the substation from the east, north or  
608 west, the line must cross the waste disposal ponds and boggy land, which would require very tall  
609 towers with very deep foundations. No studies have been completed to assess the stability of the

610 boggy land near the waste ponds, so I do not know whether it could support such massive  
611 towers. Even if the land could support the towers, the cost could approach potentially tens of  
612 millions of dollars due to the expected poor bearing capacity, similar to a river crossing. These  
613 costs are not included in my cost estimate above. Finally, the transmission lines and terminal  
614 structures already in place are located in such a manner that they would likely need to be moved  
615 to accommodate a new line into the substation.

616 **Q. Why might the existing lines and terminal structures need to be rearranged?**

617 **A.** Given the land uses surrounding the substation, there appears to be only one location  
618 where ATXI's transmission line could enter the substation. Under this scenario, a line could  
619 enter the substation from the east, with a terminal structure just north of the substation.  
620 However, a Commonwealth Edison terminal structure is currently located approximately 120  
621 feet from the fence at the northern edge of the substation, in close proximity to the place  
622 necessary to locate a new terminal structure. 345 kV transmission lines require a right-of-way  
623 that is 150 feet wide. Therefore, the existing terminal structure may need to be moved in order to  
624 accommodate the new line.

625 In addition, Commonwealth Edison connects to the Kincaid substation, and some of the  
626 existing lines belong to Commonwealth Edison. If it became necessary to relocate, replace or  
627 modify these lines to accommodate the new transmission line, ATXI would be required to pay all  
628 the costs associated with the relocation, replacement, or modifications.

629 **Q. Do you have an estimate of the costs associated with rearranging the lines, assuming**  
630 **that becomes necessary?**

631 A. No, I do not. Even if it was possible to navigate the design challenges described above,  
632 soil sampling, discussions with Commonwealth Edison, and the outcome of the interconnection  
633 study would be necessary before a reliable cost estimate could be developed.

634 **Q. Are there other costs associated with a route through Kincaid?**

635 A. Yes. As I've explained, if ATXI does not construct its substation on a new site at Pana,  
636 AIC will have to rebuild one at that or another location. Mine subsidence at the existing AIC  
637 Pana substation site requires that it be relocated. The cost to AIC to relocate its Pana substation  
638 will be borne 100% by AIC's customers. Those customers will only bear approximately 9% of  
639 the cost to ATXI to construct its proposed Pana substation. That cost differential should be  
640 considered in evaluating the total cost of a Kincaid route, as explained by Mr. Kramer.

641 **Q. Would a route through Kincaid cause negative operational issues?**

642 A. Yes. Kincaid is already operationally challenged. Kincaid has several Special Protection  
643 Systems (SPS, aka Remedial Action Schemes) in place because it does not have the right  
644 equipment and/or operating characteristics to support reliable bulk electric system operation. SPS  
645 indicate an area of the grid that is less robust and for which operations and misoperations could  
646 lead to serious consequences to the grid. In fact, SPS's are specifically called out for special  
647 treatment in several North American Electric Reliability Corporation (NERC) Standards' areas  
648 (Critical Infrastructure Protection (CIP), Interconnection Reliability Operations and Coordination  
649 (IRO), and Transmission Operations (TOP)) because they indicate an area where grid reliability  
650 is at greater risk. Therefore, bringing an additional line into Kincaid is undesirable from an  
651 operational and reliability perspective.

652 **Q. Would this problem be present with ATXI's proposed route?**

653 **A.** No. The ATXI route does not depend on Kincaid and thus avoids these issues.

654 **Q. When would you expect a Kincaid route to be in service?**

655 **A.** 2018 at the earliest. Mr. Kramer explains that ATXI would need to perform system  
656 impact studies for a Kincaid route, which would not be complete until at least March 2015. Until  
657 the outcome of the impact studies is known, ATXI cannot identify all work that needs to be done  
658 as a result of them. A known challenge, however, would be the actual connection at Kincaid.  
659 Rework or reconstruction required to connect to the Kincaid substation alone could take three to  
660 four years, to account for getting needed permission from PJM Interconnection, LLC and MISO  
661 to take outages to allow for such construction at an operating plant that has many existing  
662 important 345 kV connections. There is no practical way that could be done in less than two  
663 years.

664 As to the transmission line itself, routing for new lines can't be completed until the  
665 termination point (e.g., existing Kincaid bus, new ring bus, new substation) that will be required  
666 until the interconnection and construction design studies are done and ATXI knows what the  
667 new connections need to be electrically. If any other new lines are identified in the impact  
668 studies, the routing obviously could not begin until the outcome of the study is known. And  
669 ATXI will need to complete an environmental assessment of the route, evaluate soil borings,  
670 and perform detailed title and survey information, which, for the routes ATXI initially  
671 proposed, took over a year. Thus, if ATXI started construction design after the Commission's  
672 expected 2014 order, my best estimate would be that construction would be complete, at best,  
673 three to three-and-a-half years after that, or 2018, and potentially later.

674 **Q. What do you conclude regarding the Pawnee-Mt. Zion portion of the Project?**

675 **A.** The Project's transmission line should be routed through Pana because that route is better  
676 from an operations and reliability perspective and is least dollar cost. And, as Mr. Kramer  
677 describes, the route through Pana also addresses the reliability and operating issues that will have  
678 to be addressed in the future if not addressed as part of the Project.

679 **V. MEREDOSIA TO PAWNEE CONNECTION**

680 **Q. What route did the Commission approve for this portion of the Project?**

681 **A.** The Commission approved a route agreed to by ATXI and intervenors the Morgan and  
682 Sangamon Counties Landowners and Tenant Farmers and FutureGen Alliance. The route was  
683 originally proposed by ATXI as its Alternate Route for this segment.

684 **Q. In its rehearing application, which the Commission granted, intervenor Morgan,**  
685 **Sangamon and Scott Counties Land Preservation Group states it intends to offer additional**  
686 **evidence in support of a route identified in the pre-rehearing phase of this case as the**  
687 **MSCLTF Alternate Route. Are you familiar with that route?**

688 **A.** Yes.

689 **Q. Does it present any operations and maintenance issues that the route the**  
690 **Commission approved does not?**

691 **A.** Yes. The route that the Morgan, Sangamon and Scott Counties Land Preservation Group  
692 (MSSCLPG) supports on rehearing uses an existing 138 kV transmission line corridor. I  
693 explained at length in my rebuttal testimony during the initial phase of this proceeding why the  
694 use of existing corridors, which results in parallel transmission lines, causes operations and

695 maintenance issues, as well as reliability issues, and should be avoided wherever possible. The  
696 route the Commission approved uses new easements and therefore avoids paralleling the  
697 Project's transmission line with an existing one. In its Order, the Commission states it is,  
698 "concerned that ATXI is willing to concede that paralleling a route segment to an existing  
699 transmission line is acceptable in some instances, while not preferable in other situations, while  
700 failing to adequately identify the differences which cause it to lean one way or the other."  
701 (Order, 77.)

702 **Q. Can you explain why ATXI does not support the MSCLTF Alternate Route when it**  
703 **proposed or agreed to parallel lines for other portions of the Project?**

704 **A.** Yes. As I explained at hearing, ATXI balanced a host of factors to identify the least-cost  
705 route for each portion of the Project. It considered electrical and engineering factors such as  
706 reliability, operations, and maintenance, and it considered environmental, societal, and land use  
707 factors. In some cases, the environmental, societal, and land use issues related to a portion of the  
708 line outweighed the reliability, operations and maintenance concerns that result from  
709 constructing parallel lines in close proximity. In those instances, ATXI proposed paralleling the  
710 Project's transmission line to an existing one. During the course of this proceeding, intervenors  
711 raised environmental, societal, and land use concerns that warranted a rebalancing of all of the  
712 factors that ATXI considered when it selected the Primary and Alternate Routes that it originally  
713 proposed. Due to the rebalance that continued during the course of this proceeding, in some  
714 instances, ATXI agreed to support a portion of the route different from its original proposal,  
715 including parallel lines.

716 At the end of the day, ATXI *can* construct the Project's transmission line parallel to an  
717 existing line, and it will do so if the Commission orders it to. But the choice to parallel should be  
718 considered on a case-by-case basis and not as a de facto standard. It is important to appreciate  
719 that when ATXI constructs parallel transmission lines, it gives up reliability, operations, and  
720 maintenance benefits, such as the ones I discussed in my initial rebuttal testimony, and it takes  
721 on reliability risks. Putting transmission lines in close proximity is like putting all of your eggs  
722 in one basket. It is easier for both lines to go out, or to be taken out, when they are close  
723 together. And even in the most compelling case, paralleling routes now may result in the need  
724 for an additional circuit in the future that would not otherwise be needed. Therefore, reliability,  
725 operations, maintenance, and even security considerations weigh against paralleling transmission  
726 lines when possible. And it is possible to avoid paralleling lines for the Meredosia-Pawnee  
727 portion of the Project - the Commission's approved route does that.

728 **VI. CONCLUSION**

729 **Q. Does this conclude your direct testimony on rehearing?**

730 **A.** Yes.