

STATE OF ILLINOIS
ILLINOIS COMMERCE COMMISSION

AMEREN TRANSMISSION COMPANY OF)
ILLINOIS)
)
Petition for Certificate of Public Convenience and)
Necessity, pursuant to Section 8-406.1 of the)
Illinois Public Utilities Act, and an Order pursuant)
to Section 8.503 of the Public Utilities Act, to) Docket No. 12-0598
Construct, Operate and Maintain a New High)
Voltage Electric Service Line and Related)
Facilities in the Counties of Adams, Brown, Cass,)
Champaign, Christian, Clark, Coles, Edgar,)
Fulton, Macon, Montgomery, Morgan, Moultrie,)
Pike, Sangamon, Schuyler, Scott and Shelby,)
Illinois.)

DIRECT TESTIMONY
OF
DR. MAGDI RAGHEB

Intervenor Ragheb Family's Exhibit 1.0

DIRECT TESTIMONY OF MAGDI RAGHEB

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Q. WHAT IS YOUR NAME AND ADDRESS?

A. My name is Dr. Magdi Ragheb and my address is 2502 Jordan Drive, Champaign, Illinois 61822.

Q. WHAT IS YOUR STATUS IN THIS CASE?

I am an intervenor in this case and my wife Barbara Ragheb and I own a plot of land (“Ragheb Family Farm”) along the Alternate Route proposed by Ameren Transmission Company of Illinois (“ATXI”) between Rising and Sidney. I wish to note that the term “Ragheb Family” refers to myself, my wife Barbara Ragheb, and my son Adam Ragheb.

Q. HAVE YOU EVER TESTIFIED BEFORE THE ILLINOIS COMMERCE COMMISSION?

A. No.

Q. WHERE IS THE RAGHEB FAMILY FARM LOCATED?

A. The Ragheb Family Farm is located along County Road 600N, between County Roads 1800E and 1900E in Champaign County. The farm is located in and pays real estate taxes to the Village of Sidney, Illinois.

Q. DOES THE RAGHEB FAMILY FARM HAVE ANY EASEMENTS ENCUMBERING IT CURRENTLY?

A. No. The Ragheb Family is unaware of any easements of any sort that encumber the Ragheb Family Farm, and an in person search at the County Recorder’s Office in Urbana, Illinois has yielded no easements on the land.

Q. IS THE RAGHEB FAMILY FARM DEPICTED ON A MAP OR DIAGRAM?

A. Yes, the Ragheb Family Farm is shown in Ragheb Family Exhibit 1.1.

24 **Q. PLEASE DESCRIBE RAGHEB FAMILY EX. 1.1.**

25 A. The Ragheb Family prepared Ex. 1.1 from imagery obtained from Google maps. We
26 drew a black box around our plot of land, which comprises 80 acres of land. In the
27 southwest corner of the plot is an approximately 5000 sq ft machine shed, and in the
28 south central portion is an orchard consisting of apple, pear, peach, and apricot trees,
29 among others. An apiary also exists on the premises.

30 **Q. WHAT ARE THE EIGHT LINES LOCATED IN YOUR FIELD THAT RUN IN A**
31 **NORTH-SOUTH DIRECTION AND THREE LINES THAT RUN IN AN EAST-**
32 **WEST DIRECTION?**

33 A. Those are terraces whose purpose is to control erosion. This farm is characterized as
34 Highly Erodible Land (“HEL”), and as such, we take great care and expense to farm it
35 with no-till farming practices.

36 **Q. DO YOU HAVE ANY DOCUMENTATION PROVING THAT THIS LAND IS**
37 **HIGHLY ERODIBLE LAND AND THAT YOU FARM IT NO-TILL?**

38 A. Yes. Ragheb Family Exhibit 1.2 is a scan of a letter from the United States Department of
39 Agriculture’s Natural Resource Conservation Service. The July 2, 2012 letter states that
40 we are controlling our soil erosion level within the allowable standards for HEL cropland.

41 **Q. IS THE RAGHEB FAMILY FARM ACTIVELY FARMED?**

42 A. Yes, all but small portions around the machine shed, orchard, apiary and terraces are
43 presently farmed and at the time of this testimony are planted into winter wheat.

44 **Q. ARE THERE ANY FUTURE PLANS FOR THE RAGHEB FAMILY FARM?**

45 A. Yes. We plan to construct an ultralight flightpark on the land. Ragheb Family Exhibit 1.3
46 shows drawings and topographical maps that we submitted to the Federal Aviation

47 Administration (“FAA”) and to the Champaign County Department of Planning and
48 Zoning. My son, who is a degreed Aerospace Engineer and an FAA-certified Single
49 Engine Land and Sea Private Pilot with an Instrument Rating and a Complex Aircraft
50 endorsement, has had a love of flight since the age of eight, and we are finally in a
51 position to construct the landing strip on our farm that we have always wanted.

52 **Q. PLEASE BRIEFLY DESCRIBE YOUR EDUCATIONAL AND EMPLOYMENT**
53 **BACKGROUND.**

54 A. I received a Master of Science degree in Nuclear Engineering from the University of
55 Wisconsin-Madison in 1974, and a Ph.D. in Nuclear Engineering and Computer Science
56 from the University of Wisconsin-Madison in 1978. I have served as a Professor in the
57 University of Illinois-Urbana-Champaign Department of Nuclear, Plasma, and
58 Radiological Engineering since 1979. I teach courses on Wind Power Systems, Energy
59 Storage Systems, Nuclear Power Engineering, Safety Analysis, Monte Carlo Simulations,
60 among others. I have authored numerous papers which cover topics including but not
61 limited to wind turbine design theory, wind turbine gearbox technology, wind turbine
62 power generation, and the coupling of wind and nuclear power generation. One chapter
63 of the notes for my Wind Power Systems course deals specifically with Electrical
64 Generation and System Integration and another deals with High Voltage Direct Current
65 transmission lines for transmission of wind power.

66 **Q. ARE YOU FAMILIAR WITH THE PETITION THAT WAS FILED BEFORE**
67 **THE ILLINOIS COMMERCE COMMISSION ON JANUARY 7, 2013 (DOCKET**
68 **NUMBER 12-0598, INCOMPLETELY FILED ON NOVEMBER 7, 2012)?**

69 A. Yes. I have read the Petition and I am familiar with the Petition and Attachments.

70 **Q. ARE YOU AUTHORIZED TO TESTIFY IN OPPOSITION TO THE**
71 **AFOREMENTIONED PETITION?**

72 A. As an intervenor and affected landowner, yes, I am.

73 **Q. ARE YOU PERSONALLY FAMILIAR WITH THE CONTENTS OF THE**
74 **PETITION?**

75 A. Yes, I am.

76 **Q. ARE YOU AWARE THAT MULTIPLE PETITIONS TO INTERVENE HAVE**
77 **BEEN FILED IN THIS MATTER BY VARIOUS PARTIES, INCLUDING THE**
78 **RAGHEB FAMILY, OF WHICH YOU ARE A MEMBER?**

79 A. Yes, I am. The Ragheb Family opposes the granting of the Certificate and Order sought
80 by Petitioner and therefore the Ragheb Family filed its Petition to Intervene in this matter
81 on January 3, 2013. I am also aware that a number of our neighbors, specifically Mrs.
82 Nancy N. Madigan (represented by Attorney Andrew W. Bequette), whose farm lies
83 directly to the west of the Ragheb Family Farm, and Mr. Michael E. Lockwood, whose
84 home and woodlot lie approximately 1.25 miles west of the Ragheb Family Farm, have
85 filed petitions to intervene which have been approved.

86 **Q. WHY HAVE YOU MENTIONED THOSE TWO SPECIFIC INTERVENORS?**

87 A. I have mentioned those two specific intervenors because we have submitted a
88 Designation of Alternate route that follows an already existing 69 kV power line located
89 ½ mile north of a portion of ATXI's proposed Alternate Route. This route follows a rural
90 road, proceeds along an existing power line right-of-way ("ROW") and avoids those two
91 intervenors' land, in addition to ours.

92 **Q. WHEN DID YOU FIRST BECOME AWARE OF THE PROJECT WHICH ATXI**
93 **IS PROPOSING PURSUANT TO THE PETITION HEREIN?**

94 A. The Ragheb Family first became aware of the project around mid-September 2012 when
95 a letter was mailed to our home notifying us of an “Open House” scheduled for October
96 10, 2012 at Unity High school in Tolono, Illinois.

97 **Q. ATXI HAS CLAIMED THAT MEETINGS WERE HELD AND NOTICES**
98 **POSTED AS EARLY AS APRIL, 2012. WERE YOU AWARE OF THE PROJECT**
99 **PRIOR TO THE ARRIVAL OF THE LETTER AT YOUR HOME?**

100 A. No, I was not. The Ragheb Family was informed of only one meeting that they attended
101 at Tolono, Illinois. Reportedly, three meetings are expected to be held, of which we were
102 directly informed about only one of them.

103 **Q. ON WHAT DATE WAS THE LETTER THAT FIRST ALERTED YOU TO THE**
104 **PROJECT FIRST POST-MARKED?**

105 A. The postage printed on the letter indicated September 7, 2012.

106 **Q. IF YOU WOULD HAVE BEEN AWARE OF THE APRIL 2012 MEETINGS,**
107 **WOULD YOU HAVE ATTENDED?**

108 A. Yes, without a doubt.

109 **Q. DO YOU AND THE RAGHEB FAMILY OPPOSE THE PETITION BROUGHT**
110 **BY ATXI IN THIS CASE?**

111 A. The Ragheb Family supports the development of renewable energy resources,
112 particularly wind resources in the Midwest, and acknowledges that adequately designed
113 transmission lines are needed to effectively dispatch the electricity from the generation

114 location to consumers. The Ragheb Family, however opposes the petition brought by
115 ATXI in this case.

116 **Q. CAN YOU EXPLAIN HOW THE RAGHEB FAMILY REACHED ITS DECISION**
117 **TO OPPOSE THE PETITION?**

118 A. Yes, I can. The proposed design is lacking, in that in its rush to pre-empt competing
119 transmission lines, which I will prove later, it did not have time to or elected not to follow
120 the basic engineering requirement of comparing alternative approaches to the design and
121 showing that the chosen alternatives do indeed satisfy the reliability, safety and economic
122 requirements. The proposed design appears to be deliberately undersized. It lacks
123 transparency about the unavoidable future need to increase the capacity and enlarging the
124 right of way turning existing valuable and productive farmland into an Industrial
125 Corridor. In Champaign County, it avoids repowering existing power lines to satisfy the
126 alleged demand. In Champaign County, it avoids following existing rights of way along
127 rural roads, existing non-Ameren powerlines, and railroad tracks in favor of following
128 some boundary lines through the middle of 1 mile-square sections. It totally ignores the
129 possibility of “undergrounding” of the power lines in high-population and
130 environmentally sensitive and high value farming areas. The accounting consideration
131 appears to take precedence over the engineering design with the sole purpose, according
132 to ATXI filing, of “acquiring rights of ways” which would constitute “assets” to “be
133 depreciated” and hence “generate cash flow” so as to “facilitate the ability of ATXI to
134 obtain its own credit rating.” (ATXI Exhibit 6.0) This proposed plan is clearly a “land
135 grab” that enriches ATXI to the detriment of the Illinois rate payers who would be later
136 asked to pay for the costs of a project that follows technology in place since the 1800s,

137 and deliberately avoids more-modern approaches such as High Voltage Direct Current
138 (“HVDC”) power transmission which is considered as the most economic and reliable
139 approach to long distance power transmission, particularly for wind power transmission
140 that ATXI claims to serve. Another more modern approach avoided by ATXI is the use
141 of 765 kV AC transmission, which was pioneered by American Electric Power, the
142 owner of our proud nation’s largest electricity transmission system, in the 1960s. ATXI
143 does not present any evidence that future growth is accounted for and has avoided
144 directly answering questions extending more than 5 years beyond the completion of the
145 project, which will have a lifetime between 65 and 100 years at a minimum.

146 Undergrounding was totally ignored for the Sidney to Rising loop, which in ATXI’s own
147 words is “located in the developed portions of Champaign County;” this is exactly where
148 such an approach would be appropriate. When asked, ATXI provided no other rationale
149 as to why locating the conductors underground was not considered other than “MISO
150 evaluated the options to meet the goals of the MVP portfolio. An overhead circuit was
151 used in the system studies and was selected by MISO.” ATXI is in fact inexperienced in
152 such a process, as they have stated “ATXI does not have the experience to estimate the
153 construction cost premium of underground transmission lines when compared to above
154 ground transmission lines, so it cannot provide the cost information.”

155 The Project, as proposed, callously destroys the value of farmland along its chosen lines.
156 ATXI’s forced acquisition of ever-appreciating farmland as “assets” denies the land
157 owners the future appreciation in the value of their land yet their one-time compensation
158 will be generally tied to a valuation conducted by a company hired by ATXI. ATXI has
159 expressed that it has no intention of paying farmers any inflation-adjusted rents or

160 royalties. ATXI misrepresents its project as a wind/renewable energy project on its public
161 website to avoid scrutiny regarding its transmitting energy from the Meredosia site that is
162 planned for a coal power plant. ATXI operates a mere 28 or 29 miles of transmission
163 lines and is tasked to expand them through expropriation of over 330 miles of “assets” at
164 the expense of Illinois rate payers and farmers. It plans to operate exclusively at the 345
165 kV level, whereas nationwide plans call for 745 kV AC or HVDC transmission facilities.
166 This lack of transparency and consideration of alternatives violates general engineering
167 principles where all options should be considered before the most suitable one is adopted.

168 **Q. DOES THE RAGHEB FAMILY OPPOSE THE ALTERNATE ROUTE THAT**
169 **ATXI HAS PROPOSED THROUGH CHAMPAIGN COUNTY?**

170 A. Yes.

171 **Q. CAN YOU EXPLAIN HOW THE RAGHEB FAMILY REACHED ITS DECISION**
172 **TO OPPOSE THE ALTERNATE ROUTE THROUGH CHAMPAIGN COUNTY?**

173 A. Yes. To put it quite simply, in the rush of its “expedited procedure,” ATXI did not
174 perform a careful, diligent, and complete route evaluation and siting analysis in
175 Champaign County. The Ragheb Family’s Exhibit 1.4, Part 1 of 2, Line 1, Page 1 of 1,
176 shows a zoomed-in and unmodified portion of ATXI Exhibit 4.6, Part 10 of 10, Page 1 of
177 1, which carries the title “All Routes Considered Sidney to Rising.” Line 2 of Ex. 1.4,
178 Part 1, shows ATXI’s Legend. Both of these are taken directly and are unmodified from
179 ATXI Exhibit 4.6, Part 10 of 10, Page 1 of 1. Line 1 of the Ragheb Family’s Exhibit 1.4,
180 Part 1, shows that one of the “Opportunities Evaluated” runs directly through The
181 University of Illinois’s Willard Airport. This is an egregious error that unacceptable in
182 any engineering design. In general, roads are laid out in the standard one square mile grid

183 in Champaign County, and it is clear to persons who visit the area in person that the
184 approximately two mile by two mile plot of land upon which the airport is built is devoid
185 of the north-south and east-west roads that would be expected of the standard grid
186 pattern. It appears that ATXI simply drew an “Opportunities Evaluated” line along a road
187 that exists east and west of the airport, and sloppily continued said line through the
188 airport in order to create the appearance of having investigated routing opportunities.
189 The carelessness with which this line was drawn on ATXI Exhibit 4.6 calls into question
190 the entire process by which ATXI developed and considered its “Opportunities
191 Evaluated” and the “Route Alternatives Studied” in Champaign County.

192 **Q. IS THERE ANY OTHER EVIDENCE THAT WOULD SUGGEST ATXI DID NOT**
193 **PERFORM A CAREFUL AND DILIGENT ROUTE EVALUATION AND SITING**
194 **ANALYSIS IN CHAMPAIGN COUNTY?**

195 A. Yes. Returning to ATXI Exhibit 4.6, Part 10 of 10, Page 1 of 1, the locations of existing
196 transmission lines located east southeast of Urbana and west northwest of Sidney are
197 grossly inaccurate. The Ragheb Family frequently drives along the roads in this area that
198 is adjacent to their farm, and are fully cognizant of the locations of the existing
199 transmission lines. From an actual field survey, the Ragheb Family has created a map of
200 the power lines in that same area, and that map is presented in Ragheb Family Exhibit
201 1.4, Part 2, Lines 1-4, Page 1. The first major inaccuracy on the map is the complete
202 omission in the ATXI version of this map of an existing 69 kV power line that runs
203 northerly along Champaign County Road 1500E into the Philo Township, then turns
204 easterly along and follows Champaign County Road 700N. Lets pause here to recap –
205 ATXI has identified an opportunity directly through a regional airport with daily airline

206 service yet has neglected to locate 7 miles of 69 kV power lines that exist ½ mile from
207 their proposed Alternate Route. This 69 kV power line intersects an existing ATXI 138
208 kV transmission line, which the ATXI-proposed Alternate Route would follow,
209 approximately 3 miles south of the Sidney substation. We do wish to note that ATXI
210 identified the existence of a line at the location where this line intersects ATXI's existing
211 138 kV transmission line in ATXI Exhibit 4.2, Part 99 of 100, Page 2 of 2, but it is
212 depicted as being the same as the standard and significantly smaller distribution lines that
213 supply electricity to homes, wells, and sheds across the state. This line is most definitely
214 not one of those, and Ragheb Family Exhibit 1.4, Part 2, Lines 5-13, Pages 2-4 show
215 three pictures of this line, and one picture at the location where it traverses beneath
216 ATXI's 138 kV line south of Sidney. A document obtained with a simple in-person
217 request to the Champaign County Regional Planning Commission corroborates the
218 existence and significance (low-level distribution lines are not shown) of this line, and a
219 map from that document is presented in Ragheb Family Exhibit 1.4, Part 2, Line 14, Page
220 5.

221 Another major error in the ATXI maps is how the 138 kV transmission lines are depicted
222 to approach the electrical substation at Sidney. ATXI's map shows one coming directly
223 from the north and one directly from the south. This is correct based on our field
224 reconnaissance. The two 138 kV lines arriving from the northeast however, are
225 incorrectly displayed in the maps that ATXI is using in this expedited process. ATXI's
226 map shows one line heading in a southeasterly direction until a point approximately 0.75
227 miles due south of Sidney, where it turns northeasterly and heads towards the substation,
228 entering at the west side. The other 138 kV line is shown to turn due south approximately

229 1.5 miles north of Sidney after traveling from the southeast part of Urbana along two
230 diagonal paths. Near the east part of the center of Sidney, the line is shown to turn
231 southeast and enter the substation also from the west side. In fact, these two lines run
232 nearly parallel to the 138 kV transmission line that ATXI correctly located running due
233 south to the substation. One line runs parallel for approximately 0.5 miles, while one runs
234 for approximately 1 mile. A photograph of the three nearly parallel lines is presented in
235 Ragheb Family Exhibit 1.4, Part 2, Page 7, Lines 22-24. The conclusion is that ATXI is
236 basing its expedited procedure project on clearly its inaccurate power lines maps.

237 The final major inaccuracy with ATXI's maps of lines in Champaign County deals with
238 the location of the two 138 kV transmission lines described in the above paragraph. The
239 northerly one is shown to follow two diagonal paths between Sidney and Urbana, then
240 turns north approximately 1/2 mile south of Urbana, passing west of the (correctly
241 located) substation near the intersection of Windsor and High Cross (State Highway 130)
242 Roads. In truth, this line follows north-south and east-west roads for approximately 2/3
243 of the way from Sidney to Urbana. Approximately 0.5 miles east of the Urbana
244 substation, the line splits, with one spur heading due north, and the other heading due
245 west to connect to the Urbana substation at the intersection of High Cross and Windsor
246 roads.

247 The second 138 kV transmission line is shown by ATXI to follow a diagonal path
248 approximately 1 mile south of the previous paragraph's transmission line until a point
249 near High Cross Road (State Highway 130) and County Road 1200N where it turns due
250 west. In truth, this line follows the diagonal, old railroad ROW path that the previous
251 line was shown to almost follow. This line comes very close to interescting with the other

252 line, and then turns due west, heads south for a mile, then due west. For reference, a
253 zoomed-in and unmodified copy of ATXI's Exhibit 4.6 is shown on Page 6 of Ragheb
254 Family Exhibit 1.4, Part 2 of 2. Once again, the correct map plotted by us is shown on
255 Page 1 of Ragheb Family Exhibit 1.4, Part 2 of 2.

256 **Q. HAS ATXI CLAIMED TO HAVE PERFORMED FIELD RECONNAISSANCE IN**
257 **CHAMPAIGN COUNTY?**

258 A. Yes. In ATXI's response to a Ragheb Family Data request as to the dates and methods
259 (ground vehicle or aerial vehicle), ATXI's Donell Murphy has stated "To the extent
260 feasible from locations of nearby public access, field reconnaissance was completed via
261 ground vehicle by ERM in July 2012. Helicopter-based field reconnaissance was
262 performed jointly by ATXI and ERM in September 2012."

263 **Q. WHY ARE YOU CONCERNED WITH THE AFOREMENTIONED ERRORS IN**
264 **ATXI'S MAPS?**

265 A. These errors in the ATXI's maps indicate that minimal attention was given to locating
266 existing transmission lines, despite ATXI listing "Transmission line rights-of-way" as an
267 opportunity in ATXI Exhibit 4.4, Page 1 of 1. By mislocating and missing existing
268 transmission lines, ATXI was unable to perform a correct and accurate analysis of
269 repowering or adding an additional circuit to an existing transmission line. This could be
270 considered as deciding whether to repair or replace an existing road without even
271 knowing where the existing road location is and how long it is. Looking at the problem
272 from this perspective, it is impossible that an accurate analysis was performed, and if
273 repowering or using dual circuits on existing power lines were even properly
274 investigated. By completely neglecting to include 7 miles of 69 kV power lines that run

275 along a secondary road, ATXI has missed out on two of their opportunities listed in
276 ATXI Exhibit 4.4; those opportunities missed being: “Secondary roads” and
277 “Transmission line rights-of-way.” This is akin to building a new road without knowing
278 where the old road exists.

279 **Q. ASIDE FROM CREATING A CORRECT MAP, HAS THE RAGHEB FAMILY**
280 **DONE ANYTHING AS A RESULT OF ATXI’S INCORRECT MAP OF THE**
281 **AREA NEAR SIDNEY?**

282 A. Yes. The Ragheb Family has submitted a Designation of Alternate Route that corrects the
283 inadequacies in ATXI’s Alternate Route.

284 **Q. CAN YOU BRIEFLY DESCRIBE THIS DESIGNATION OF ALTERNATE**
285 **ROUTE?**

286 A. Yes. Our proposed alternate route modifies only a 7 mile portion of ATXI’s Champaign
287 County Alternate Route to follow the existing 69 kV power line of which ATXI’s maps
288 were nearly completely devoid. This route does not change the length of the transmission
289 line when compared to ATXI’s proposed Alternate Route, and it provides ATXI with 7
290 miles of transmission line along secondary paved country roads for construction and
291 maintenance access instead of running through the middle of sections where roads or
292 gravel paths do not currently exist. This prevents at least part of the callous destruction of
293 valuable farmland with the sole purpose of “acquiring assets” then “depreciating” them to
294 “generate cash flow.”

295 **Q. WILL ATXI EXPERIENCE ANY OTHER BENEFITS FROM THE RAGHEB**
296 **FAMILY’S MODIFICATION TO ATXI’S ALTERNATE ROUTE?**

297 A. Yes. By having 7 miles of transmission line adjacent to paved country roads where an
298 existing high voltage power line already exists, we expect that ATXI will have its
299 construction, maintenance, and repair in the event of storm-induced damage costs
300 reduced. Additionally, with a road adjacent to the line, it may be reasonably assumed
301 that less crops will be destroyed for maintenance and repair of the lines, which will
302 benefit ATXI through reduced payments to farmers and will promote a less-stressed
303 relationship between farmers and ATXI.

304 **Q. HOW WILL THE RAGHEB FAMILY DESIGNATION OF ALTERNATE**
305 **ROUTE ADVERSELY AFFECT ATXI?**

306 A. I believe that these 7 miles of transmission line and their respective easement, if
307 collocated with the existing 69 kV power line (Ragheb Family's Designation of Alternate
308 Route), will be of a lower asset value to ATXI than 7 miles of transmission line where the
309 poles and easements are not shared (*i.e.* ATXI's unmodified Alternate Route). Other than
310 this, ATXI will only benefit from the Ragheb Family's Designation of Alternate Route.

311 **Q. CAN YOU FURTHER EXPLAIN THE BASIS FOR YOUR PREVIOUS**
312 **ANSWER?**

313 A. Yes. A data request to ATXI was made regarding the value of overlapping easements to
314 ATXI versus non-overlapping easements. As shown in Ragheb Family Exhibit 1.5, Part
315 1, ATXI attempted to avoid the question, trying to steer it into a question about
316 compensation to landowners when in fact the question was clearly inquiring about the
317 value of easements to ATXI. It is my conclusion that ATXI wanted to avoid stating that
318 overlapping easements are not worth as much as non-overlapping easements for

319 accounting purposes, as this would be evidence against ATXI and a reason for ATXI to
320 seek non-overlapping easements in order to acquire assets with a greater value.

321 **Q. WILL AREA FARMERS AND/OR LANDOWNERS BENEFIT FROM THE**
322 **RAGHEB FAMILY'S MODIFICATION TO ATXI'S ALTERNATE ROUTE?**

323 A. Yes. Farms, farmsteads, and residences that currently do not have power lines running
324 through them or along their property lines will not have to have a transmission line
325 added, thus sparing them of the environmental impact of the construction and
326 maintenance of the transmission line. If the line needs repair, farmers' crops will not have
327 to be destroyed, and the farmers will not have to request repairs to their tiling systems or
328 compensation for trampled crops. The Ragheb Family has identified 9 farmsteads that
329 will be spared the disturbance of the construction and maintenance of a transmission line,
330 and from the disturbance of corona discharge. Two horse grazing pastures and a cow
331 grazing pasture will also be spared the presence and well documents ill-effects of the
332 transmission line. In addition to the benefits shared by all farmers, the Ragheb Family
333 will not have their ultralight flightpark permanently ruined.

334 **Q. WILL ANY OTHER INTERVENORS IN THIS CASE BENEFIT FROM THE**
335 **RAGHEB FAMILY'S MODIFICATION TO ATXI'S ALTERNATE ROUTE?**

336 A. Yes. The properties of Mrs. Nancy N. Madigan and Mr. Michael E. Lockwood will no
337 longer be affected by ATXI's Alternate Route if the Ragheb Family's modification is
338 incorporated.

339 **Q. DOES THE RAGHEB FAMILY'S MODIFICATION TO ATXI'S ALTERNATE**
340 **ROUTE AFFECT ANY INTERVENORS IN THIS CASE?**

341 A. To the best of my knowledge, no.

342 **Q. HOW MANY RESIDENCES WILL BE AFFECTED BY THE RAGHEB**
343 **FAMILY'S MODIFICATION TO ATXI'S ALTERNATE ROUTE?**

344 A. The Ragheb Family's modification to ATXI's Alternate Route will bring the transmission
345 line within 150 feet of no more than 9 residential buildings. That being said, zero
346 **additional** residential buildings will be located within 150 feet of the transmission line,
347 as all (up to) 9 already have already a power line within 150 feet of them. Additionally,
348 one of the residential buildings appears to be abandoned. It is located at the southwest
349 corner of the intersection of Champaign County Roads 700N and 2100E and a
350 photograph of it is shown in Ragheb Family Exhibit 1.5, Part 2, Page 1. Another one of
351 the buildings already lies on ATXI's Alternate Route

352 **Q. DOES ATXI OPPOSE THE RAGHEB FAMILY'S MODIFICATION TO ATXI'S**
353 **ALTERNATE ROUTE?**

354 A. Yes. ATXI's Donnell Murphy has stated that "ATXI does not support the modification to
355 ATXI's proposed Alternate Route south of the Village of Philo as there are a greater
356 number of existing homes located along this modified segments, in comparison to the
357 comparable portion of ATXI's proposed Alternate Route."

358 **Q. HOW DO YOU RESPOND TO ATXI'S OPPOSITION?**

359 A. Based on our field reconnaissance of the route, 9 farmsteads will be avoided through the
360 adoption of our modification to ATXI's Alternate Route. While our modification would
361 have 9 residences within 150 feet of its centerline, one of those residences is already
362 within 150 feet of ATXI's Alternate Route, and one appears to be abandoned. Regardless
363 of the number of residences within 150 feet of our Alternate Route, all, and it is
364 emphasized, **ALL** residences within 150 feet of our Alternate Route already have the

365 power line photographed in Ragheb Family Exhibit 1.5, Pages 2 through 4 running within
366 150 feet of them. ATXI's unmodified route will result in an **ADDITIONAL** 9 farmsteads
367 that will have a transmission line passing very close to, if not directly over, them. The
368 Ragheb Family's modification to ATXI's Alternate Route will instead avoid 9
369 farmsteads, and thus the number of residences by power lines over this 7 mile stretch will
370 not increase from the *status quo*. No consideration to the three horse and cow grazing
371 lands, the ultralight flightpark, and the HEL that would be impacted by ATXI's alternate
372 route was made in Ms. Murphy's response.

373 **Q. CAN YOU PRESENT A COMPARISON OF THE RAGHEB FAMILY'S**
374 **MODIFICATION TO ATXI'S ALTERNATE ROUTE TO ATXI'S UNMODIFIED**
375 **ALTERNATE ROUTE BASED ON ROUTING CRITERIA USED IN THE PAST**
376 **BY THE ILLINOIS COMMERCE COMMISSION ("ICC")?**

377 A. Yes. Based on and adapted from the twelve factors listed in the Commission's Order on
378 Reopening in Docket 06-0706, a comparison of the two routes is presented below:

379	<u>FACTOR</u>	<u>PREFERRED ROUTE</u>
380	1. Length of the line	NEITHER
381	(both are 7 miles in length)	
382	2. Difficulty and cost of construction	RAGHEB FAMILY ROUTE
383	(Ragheb route lies along a paved road)	
384	3. Difficulty and cost of operation and maintenance	RAGHEB FAMILY ROUTE
385	(Ragheb route lies along a paved road)	
386	4. Environmental impacts	RAGHEB FAMILY ROUTE
387	(Ragheb route avoids highly erodible land that is farmed no-till)	
388	5. Impacts on historical resources	NEITHER
389	(To the best of our knowledge no historical resources exist along either route)	
390	6. Social and land use impacts	RAGHEB FAMILY ROUTE
391	(Ragheb route prevents interference with horses, cows, and an ultralight flightpark)	

- 392 7. Number of affected intervenors/other stakeholders RAGHEB FAMILY ROUTE
393 (Ragheb route avoids 3 intervenors' properties)
- 394 8. Proximity to homes/structures currently w/o a power line RAGHEB FAMILY ROUTE
395 (Ragheb route adds a high voltage power line to zero houses)
- 396 9. Proximity to existing and planned development RAGHEB FAMILY ROUTE
397 (Ragheb route avoids a planned ultralight flightpark)
- 398 10. Community acceptance NEITHER
399 (No community has spoken against either route)
- 400 11. Visual impact RAGHEB FAMILY ROUTE
401 (Ragheb route prevents a second transmission line being added 0.5 mi from existing one)
- 402 12. Presence of existing corridors RAGHEB FAMILY ROUTE
403 (Ragheb route makes use of an existing high voltage line corridor)

404 **Q. RETURNING TO THE RAGHEB FAMILY'S OPPOSITION TO ATXI'S**
405 **PETITION, CAN YOU PROVIDE A BRIEF SUMMARY OF THE REASONS**
406 **BEHIND THAT OPPOSITION?**

407 A. Yes. A brief summary of the reasons behind the Ragheb Family's opposition to ATXI's
408 petition are as follows:

- 409 1. The Illinois Rivers Project is not part of a national plan for wind power
410 conveyance, that ATXI claims to serve, from the western production sites to
411 the eastern consumption sites.
- 412 2. The Illinois Rivers Project appears rushed to market, and exhibits telltale signs
413 of deliberate undersizing of a merchant transmission line.
- 414 3. The use of HVDC and 765 kV Alternating Current (AC) were not considered,
415 and both of these are a more efficient use of the right-of-ways ("ROWS").
- 416 4. ATXI's petition should be considered as part of a long-term, statewide plan,
417 and not piecewise within the ICC. It needs to be evaluated in comparison to

418 all projects (senator’s letter). It must be noted that Illinois lawmakers have
419 expressed opposition to the current “expedited process.”

420 5. ATXI admits that the line passes through “developed portions of Champaign
421 County.” Hence it should be asked to perform an analysis of undergrounding
422 the power lines in this area or repowering existing ROWs to avoid “the
423 increased number of routing sensitivities in this area” and to avoid affecting
424 previously unaffected routing sensitivities.

425 6. ATXI is not operating with transparency by undersizing its power line,
426 knowing that it will be required to increase capacity in the future and thus
427 turning the expropriated ROWs into Industrial Corridors.

428 **Q. CAN YOU PLEASE ELABORATE UPON AND PROVIDE EVIDENCE TO**
429 **SUPPORT THE RAGHEB FAMILY’S FIRST REASON FOR OPPOSING THE**
430 **PETITION, THAT THE ILLINOIS RIVERS PROJECT IS NOT PART OF A**
431 **NATIONAL PLAN?**

432 A. Yes. Through the website www.ilriverstransmission.com/need, ATXI states that the first
433 goal of the project is to “Facilitate the delivery of renewable energy.” The majority of the
434 colors on the website are green, which (incorrectly) makes this project appear like one
435 dealing with “green energy.” As stated many times, this Project will allegedly provide a
436 path for wind power from Iowa to head east to Indiana and beyond, a path that traverses
437 and involves a number of states. The Ragheb Family has identified in the publicly
438 available literature two different concepts for a national electrical grid plan, and the
439 Illinois Rivers Project is clearly not compatible with or a part of any of those plans. The
440 first plan is shown in Ragheb Family Exhibit 1.6, Page 7. This plan shows a conceptual

441 765 kV system designed by American Electric Power, an experienced pioneer in
442 electrical transmission technologies, and hosted on the American Wind Energy
443 Association website to integrate wind resources into an interstate transmission system. In
444 regards to Illinois, a 765 kV line is shown traversing the state's northern portion, and
445 another 765 kV line is shown traversing the southern portion of the state. Looking closely
446 at Central Illinois, the Rising and Sidney substations clearly remain without the
447 unsubstantiated connection between them at the 345 kV voltage level that is proposed by
448 ATXI in order to provide them with two connections across Illinois at the 345 kV level
449 (ATXI Response to ICC Staff Data Request 1.22, dated 12/12/2012) through the
450 construction of the Illinois Rivers Project.

451 The second national grid plan was proposed in a technical report entitled "20 Percent
452 Wind Energy by 2030" that was compiled and distributed by the United States
453 Department of Energy (USDOE). This technical report was an over 15-month endeavor
454 of more than 90 individuals and more than 50 organizations. The chapter entitled
455 "Transmission and Integration into the U.S. Electric System" in the aforementioned
456 report includes contributions from those individuals listed in Ragheb Family Exhibit 1.7,
457 Page 2. Those 36 individuals come from a wide variety of both private and public
458 organizations from across the country. The ATXI line is not part of this plan either as
459 depicted in Ragheb Family Exhibit 1.7, Page 1, and once again, the substations of Sidney
460 and Rising are shown to remain without the superfluous connection at the 345 kV level
461 between them proposed by ATXI.

462 **Q. CAN YOU PLEASE ELABORATE UPON AND PROVIDE EVIDENCE TO**
463 **SUPPORT THE RAGHEB FAMILY'S SECOND REASON FOR OPPOSING THE**

464 **PETITION, THAT THE ILLINOIS RIVERS PROJECT APPEARS TO BE**
465 **RUSHED TO MARKET AND EXHIBITS TELLTALE SIGNS OF DELIBERATE**
466 **UNDERSIZING OF A MERCHANT TRANSMISSION LINE?**

467 A. Yes. To start the discussion of deliberate undersizing of a merchant transmission line, we
468 wish to first bring to your kind consideration the Ragheb Family Exhibit 1.8, Part 1 of 6
469 (emphasis added), which is a publicly-available paper by Dr. Paul Joskow and Jean
470 Tirole. Dr. Paul Joskow holds a Ph.D in Economics from Yale University and has
471 authored numerous papers on a wide variety of energy topics and is currently a Professor
472 of Economics at the Massachusetts Institute of Technology (“MIT”) and is President and
473 CEO of the Alfred P. Sloan Foundation. Chapter 5 of Ragheb Family Exhibit 1.8
474 describes “Lumpy transmission investments.” A lumpy infrastructure project is one
475 where the average cost of a project decreases as the capacity of the transmission link
476 increases. Instead of attempting to paraphrase Dr. Joskow’s words, we kindly direct the
477 readers to read the two highlighted paragraphs on Pages 22 and 23 of Ragheb Family
478 Exhibit 1.8, Part 1 of 6 (emphasis added). The conclusion section of the paper reads:

479 “We show how economies of scale will lead to under-investment,
480 to monopoly pre-emption of competitive generation or transmission
481 investments, and distort the timing of investments. We argue that these
482 problems are unlikely to be resolved by relying on bilateral or multilateral
483 negotiations among the market participants who gain and lose from these
484 investments. Indeed, opportunities for multilateral bargaining may further
485 distort investment incentives.”

486 My first conclusion, given Dr. Joskow's paper and evidence which I will present right
487 below is that ATXI is attempting to pre-empt its competitors on a cross-Illinois
488 transmission line with an undersized line. Talk of difficulty in obtaining siting authority
489 and a "scarcity of rights-of-way" relates directly to the Illinois Rivers Project. Clearly,
490 with opposition from so many landowners, and even the Illinois Farm Bureau intervening
491 in this case, there is clearly a reluctance on the part of landowners to give away their land
492 for a transmission project. Additionally, because of the productive and valuable nature of
493 Illinois farmland, not every power line that is proposed can be built. While Illinois does
494 not necessarily lie between a cheap and an expensive area, Illinois lies between an area
495 where wind power resources are good (Iowa) and where wind power resources are poor
496 (southern half of Indiana, northwest part of Kentucky). Thus, there exists a scarcity of
497 rights-of-way in Illinois.

498 This scarcity of rights-of-way in Illinois is "particularly problematic as demand grows"
499 according to Dr. Joskow's paper. Demand does not appear to be growing rapidly, but let
500 us agree for the sake of only this argument with ATXI that there is a growing demand for
501 such a line. Illinois landowners may allow one line to be constructed, but opposition to a
502 second one will be much stronger and more organized. Thus, like in Dr. Joskow's
503 example, Illinois may be thought of as the corridor through the Pyrénées Mountains
504 between France and Spain. It therefore follows that a merchant transmission line through
505 Illinois would gravitate towards following a "preemption and monopoly" situation
506 because of the scarcity of rights-of-way through Illinois.

507 Evidence for ATXI's attempt to preempt all other transmission lines include (1) ATXI is
508 seeking expedited procedures in this docket, (2) ATXI's federal request for ratemaking

509 approval was premature, (3) ATXI requested a short 60 day timetable at the federal level
510 and (4) ATXI followed procedures out of order to “move forward [] as quickly as
511 possible.” Therefore, ATXI has exhibited a clear track record of attempting to pre-empt
512 all other projects beginning at least three years ago.

513 Firstly, ATXI is attempting to pre-empt the Rock Island Clean Line by seeking approval
514 through the Illinois Commerce Commission’s (“ICC’s”) expedited procedures. Despite
515 the fact that ATXI filed its petition after Rock Island Clean Line did in docket 12-0560,
516 this docket will presumably have a final order issued prior to that of docket 12-0560 due
517 to the expedited procedures.

518 Secondly, ATXI sought ratemaking proposal approval and investment incentives
519 prematurely. I present to you Ragheb Family Exhibit 1.8, Parts 2 and 3 (emphasis added),
520 which are letters written by the ICC and the Missouri Joint Municipal Electric Utility
521 Commission (“MJMEUC”), respectively. On August 2, 2010, Ameren Services made a
522 filing with the Federal Energy Regulatory Commission (“FERC”) (docket EL10-80-000)
523 to approve investment incentives and ratemaking proposals for four projects, one of
524 which was the Illinois Rivers Project. This petition was approved in regards to the Illinois
525 Rivers Project by FERC on May 19, 2011, despite **Ameren’s request for a ruling**
526 **within 60 days**, conditioned on the Project’s approval in the MISO MTEP. Both the ICC
527 and MJMEUC stated in their petitions to intervene that Ameren’s petition was
528 **premature**, and the ICC recommended **“that the petition not be approved at this**
529 **time.”**

530 Finally, ATXI has followed procedures out of order in order to move forward as quickly
531 as possible. Ameren approached FERC prior to MISO’s approval of the Illinois Rivers

532 Project **and** proposed a 60 day timetable “so that Ameren may move forward with the
533 projects as quickly as possible.” The following of an out of order approvals process is
534 why FERC’s approval of Ameren’s request was conditioned on MISO’s approval of the
535 project. This is further evidence that as early as 2010, Ameren was rushing to get
536 through the approvals processes, sometimes out of order, in order to preempt all other
537 projects similar to the Illinois Rivers Project. Thus, Ameren has exhibited a deliberate
538 strategy of pre-emption of all other transmission lines. This argument is further bolstered
539 by the errors and mistakes in ATXI’s maps described earlier.

540 Following the “preemption and monopoly” situation, Dr. Joskow states that “a merchant
541 will install a small capacity on the corridor to gain a toehold and will later expand this
542 capacity. He continues on to states that “Moreover, scarce corridors are typically not
543 allocated through auctions but rather through a regulatory process that places a premium
544 on being first in line.” That “regulatory process” is what is currently occurring here in
545 ICC docket 12-0598. ATXI is installing a small capacity on this route, and its
546 representatives have objected to our family’s data requests inquiring whether ATXI will
547 (1) seek to add a transmission line parallel to or within 1 mile of the existing line, (2)
548 seek to repower and/or expand the right-of-way of the Project, or (3) seek to add an
549 additional circuit to the existing transmission line. A copy of our questions and ATXI’s
550 responses are presented in Ragheb Family Exhibit 1.8, Part 4 of 6, Pages 1 through 3.
551 ATXI stated that all three of these questions were not relevant or material to this
552 proceeding, but they are highly relevant, as we provided ATXI the chance to state that
553 their line was indeed properly sized. ATXI promptly avoided the question. Our questions
554 sought to shed light on whether ATXI felt it had properly sized the Project, which, by

555 ATXI's own response has operational lifetimes of 60-100 years for the steel pole
556 structures and 60 years for the (Cardinal) conductor. The Ragheb Family specified a time
557 period of 30 years based on ATXI's initial depreciation schedule submitted to the FERC,
558 which was subsequently denied because "Ameren did not explain why a 30-year
559 depreciable life reflects the projects' expected useful life." By avoiding these questions
560 and claiming they are not relevant or material, ATXI has demonstrated that it is unwilling
561 to state that the Project will be sized large enough over a mere 50% (and possibly as low
562 as 30%) of the Project's lifetime. This implies that, within the next 30 years or less, a
563 length of time that is half of the expected lifetime, ATXI will seek to increase the
564 capacity of portions of the Illinois Rivers Project. The only reason for increasing capacity
565 is to correct an undersized situation, and thus ATXI has provided evidence that it has
566 deliberately undersized the Illinois Rivers Project. Based on ATXI's answers and on Dr.
567 Joskow's paper, it is my conclusion that it is an almost certainty that ATXI will come
568 back in the next 5-30 years and either seek to add an additional circuit, seek to install a
569 parallel transmission line, or seek to repower to a higher voltage the transmission line.
570 This in effect will create a highly undesirable (except from the point of view of ATXI)
571 "Industrial Corridor" directly through the valuable and otherwise productive farmland of
572 Illinois. An example of this "Industrial Corridor is presented in Ragheb Family Exhibit
573 1.8, Part 5 of 6, Pages 1 and 2. These photographs were taken by the Ragheb Family
574 along I-57 directly south of Peotone, IL, and show one older High Voltage Alternating
575 Current ("HVAC") transmission line and a newer HVAC transmission line that was
576 installed. This is what I fear will happen if the Illinois Rivers Project is approved as
577 currently proposed due to its deliberate undersizing.

578 Returning to Ragheb Family Exhibit 1.8, Part 4, I wish to note that all three responses
579 provided by ATXI did not list the person responsible for authoring the answer. I therefore
580 inferred that this answer came directly from ATXI's legal counsel. When the ICC Staff
581 inquired as to ATXI's plans for construction within 5 years and 5 miles of any part of the
582 Project, ATXI's Dennis Kramer responded that no plans exist for construction within the
583 5 years and 5 mile window.

584 Further evidence for the deliberate undersizing by ATXI lies in the fact that this line is
585 specified to be a 3,000 Ampère ("A"), 345 kV transmission line (ATXI Exhibit 1.0, Line
586 89). An amp multiplied by a volt equals a watt, which is a unit that describes the rate of
587 energy transfer, the purpose of a transmission line. Based on ATXI's supplied values, the
588 Illinois Rivers Project has a rating of 1,035 million watts, or 1,035 megawatts ("MW").
589 The other similar transmission line currently before the ICC, the Rock Island Clean Line,
590 has specified in its petition that it will operate a 600 kV DC transmission line capable of
591 delivering 3,500 MW of power, implying that it will operate at a current of approximately
592 5,830 A. This rating of 3,500 MW, *i.e.* the amount of energy that may be transferred, is
593 338% that of the Illinois Rivers' proposed transmission lines. To the best of the Ragheb
594 Family's knowledge, other competing projects all propose transmission at 765 kV of
595 alternating current ("AC") or 500 or 600 kV of direct current ("DC").

596 **Q. WOULDNT A 765 KV AC LINE CARRY ONLY TWICE AS MUCH ENERGY**
597 **AS A 345 KV AC LINE?**

598 A. No. I will address this point shortly.

599 **Q. OK. PLEASE CONTINUE WITH YOUR DISCUSSION OF EVIDENCE THAT**
600 **ATXI MAY HAVE DELIBERATELY UNDERSIZED THE ILLINOIS RIVERS**
601 **TRANSMISSION LINE PROJECT.**

602 A. Thank you. Dr. Joskow continues on to state that the lumpiness may make “investment
603 occur too early when it takes place in order to pre-empt additional entry. [] It could also
604 lead to the investment being ‘undersized’. For example if the optimal investment is 600
605 MW, a merchant developer may find it most profitable to invest in a 300 MW
606 enhancement, pre-empting additional investment.” In the case of the Illinois Rivers
607 Project, ATXI, in a non-transparent strategy, has sized their transmission line to be less
608 than one third that of the other line currently with a petition before the Illinois Commerce
609 Commission.

610 **Q. ARE THERE OTHER PROPOSED TRANSMISSION LINE PROJECTS TO**
611 **MOVE POWER ACROSS ILLINOIS THAT HAVE NOT YET MADE IT TO THE**
612 **ICC?**

613 A. Yes. According to Ragheb Family Exhibit 1.9, Part 1, there are eight identified other
614 proposed projects in the preliminary stages. The Ragheb Family is cognizant of three of
615 those eight reported projects as mentioned by Illinois State Senator Sue Rezin.

616 **Q. WHAT ARE THOSE THREE PROJECTS WITH WHICH THE RAGHEB**
617 **FAMILY IS COGNIZANT?**

618 A. We are cognizant of the RITELine transmission project, which is a joint venture between
619 Exelon and American Electric Power Company. This line would consist of 420 miles of
620 765 kV HVAC transmission line and falls under PJM instead of MISO. Duke American
621 Transmission Company, a joint venture of Duke Energy and American Transmission

622 Company, has proposed its Projects 2 and 4, which together would comprise 552 miles of
623 500 kV HVDC transmission line and 189 miles of double circuit 345 kV HVAC
624 transmission line. Finally, there is the Grain Belt Express Clean Line, which would
625 involve 700 miles of HVDC transmission lines capable of delivering 3,500 MW of
626 power.

627 **Q. DOES THE RAGHEB FAMILY STAND TO FINANCIALLY BENEFIT FROM**
628 **ANY OF THOSE THREE PROJECTS?**

629 A. Not directly, but indirectly. The Ragheb Family stands to benefit solely along with all
630 Illinois ratepayers through the benefits of a properly-sized, unrushed transmission line, if
631 a need is indeed demonstrated. We have no offers of compensation for our testimony in
632 this case, and do not own financial interests or receive compensation for testimony from
633 any of the companies that Ameren seeks to preempt.

634 **Q. LET US RETURN TO THE COMPARISON OF 765 KV AC AND 345 KV AC.**
635 **HOW MUCH MORE ENERGY CAN A 765 KV AC TRANSMISSION LINE**
636 **CARRY?**

637 A. To respond to this question, I direct the reader to Ragheb Family Exhibit 1.8, Part 6 of 6,
638 a publicly-available document distributed by the American Electric Power Company,
639 which at the time of its publication owned the largest electricity transmission system in
640 the USA. In “Q11” on Page 3 of 6 of Exhibit 1.8, Part 6, it is stated that six 345 kV
641 circuits would be required to match a 765 kV line in terms of loadability. For distances
642 up to 300 miles, a 765 kV line can deliver 2,200 – 2,400 MW while a 345 kV line can
643 deliver only 400 MW over that distance. The proposed distance for the Illinois Rivers
644 Project is approximately 330 miles according to the Illinois Rivers Project website. It

645 should be noted that this website provides incorrect and incomplete information, in that
646 they state “Common transmission line voltages include 138,000 volts, 161,000 volts,
647 230,000 volts and 345,000 volts.” No mention is made of 765,000 volt (765 kV), 600 kV,
648 or 500 kV transmission line voltages.

649 **Q. IS THE RIGHT OF WAY FOR A 765 KV AC LINE SIX TIMES THAT**
650 **REQUIRED FOR A 345 KV LINE?**

651 A. No. As stated in Ragheb Family Exhibit 1.8, Part 5, Page 2, “Q8,” the right-of-way width
652 for a 765 kV AC transmission line is 200 feet; as stated in the same location and
653 repeatedly throughout this docket, the right-of-way width for a 345 kV transmission line
654 is 150 feet.

655 **Q. EARLIER YOU MENTIONED DIRECT CURRENT. IS DIRECT CURRENT**
656 **BETTER THAN, WORSE THAN, OR COMPARABLE TO ALTERNATING**
657 **CURRENT FOR TRANSMISSION LINES?**

658 A. HVDC is unequivocally superior to HVAC for long distance electrical power
659 transmission. This is one of many reasons I am sure why DATC’s Project 2, the Rock
660 Island Clean Line, and the Grain Belt Express correctly propose to use HVDC.

661 **Q. DID ATXI CONSIDER THE USE OF HVDC FOR ANY PORTIONS OF THE**
662 **ILLINOIS RIVERS PROJECT?**

663 A. No. In their response to the first question of the Ragheb Family’s first set of data
664 requests, ATXI through its Director of Transmission Operations Jeffrey V. Hackman
665 stated in response to whether ATXI evaluated HVDC for the Project “No. The planning
666 analysis for the MVP portfolio was performed by MISO. As such, they evaluated the
667 options.”

668 **Q. DID MISO CONSIDER THE USE OF HVDC FOR ANY PORTIONS OF THE**
669 **ILLINOIS RIVERS PROJECT?**

670 A. It does not appear so. MISO considered 345, 2-345, and 765 kV in Illinois and 500 kV
671 only in Minnesota based on information presented on page 226 of MISO's MTEP 2009
672 Report. MISO did draw two 800 kV HVDC transmission lines running from northern
673 and central Illinois to New York in Fig. 10.3-1 and 3 across Illinois in Fig. 10.3-2, but
674 these were listed as future conceptual plans. It is **very** confusing that the Illinois Rivers
675 Project lines are not shown in MISO's Fig. 10.3-2 "Conceptual Transmission for
676 Renewable Future" while "Facilitate the delivery of renewable energy" is listed as the
677 first bullet point at <http://www.ilriverstransmission.com/need>.

678 **Q. DID ATXI CONSIDER THE USE OF 765 KV AC FOR ANY PORTIONS OF THE**
679 **ILLINOIS RIVERS PROJECT?**

680 A. I do not know. However, MISO apparently controls no 765 kV ("600 kV +") lines
681 according to the 2011 NERC Long Term Reliability Assessment data submittals. It does
682 however have 13,117 miles of 300-399 kV lines. Despite the fact that MISO is the fourth
683 largest group behind NPCC, PJM, and SERC in terms of transmission line mileage, it
684 controls 1,623 more miles of 300-399 kV lines than the second place group (NPCC) in
685 this voltage level range. These data suggest that MISO's voltage level portfolio is heavily
686 weighted towards 300-399 kV lines, and this may not be the best solution for the future.
687 Additionally, ATXI stated in ATXI Exhibit 2.0, Page 4 of 29, Lines 79-82 that "ATXI's
688 transmission system interconnects with the Ameren Illinois transmission system at the
689 transmission voltage level. ATXI's transmission system is designed to facilitate
690 movement of large quantities of electrical energy within and across Illinois and therefore

691 currently operates exclusively at the 345 kV transmission voltage level.” Operating
692 exclusively at a single voltage level does not suggest that all or even any viable alternate
693 voltage options were evaluated for the Illinois Rivers Project.

694 **Q. IF INDEED ATXI AND/OR MISO DID NOT CONSIDER HVDC AND/OR A 765**
695 **KV SOLUTION TO THE ALLEGED NEED BEHIND THE ILLINOIS RIVERS**
696 **PROJECT, WOULD YOU, AS AN ENGINEER, CONSIDER THE ANALYSIS TO**
697 **BE A COMPLETE ONE?**

698 A. Absolutely not. Engineers are expected to evaluate multiple reasonable options, and
699 select the solution that best addresses the requirements at hand. They are also ethically
700 bound by the ethics of their professional societies to seek “informed consent” by the
701 public and people affected by the details of projects. Multiple reasonable options should
702 also have included following existing transmission corridors and undergrounding in
703 Champaign County.

704 **Q. HOW WOULD YOU SUGGEST THE CURRENT SITUATION REGARDING**
705 **THE ILLINOIS RIVERS PROJECT BE ADDRESSED?**

706 A. First off, I recommend that the “expedited procedures” of this proceeding be ordered
707 abandoned by the ICC.

708 **Q. IS THERE ANY BASIS FOR YOUR RECOMMENDATION OF ABANDONING**
709 **THE EXPEDITED PROCEDURES?**

710 A. Yes. Illinois State Senator Chapin Rose filed State Bill SB1874 to the 98th General
711 Assembly in hopes of amending the Public Utilities Act to allow a public utility to apply
712 for expedited review of a certificate of public convenience and necessity for any new
713 high voltage electric service line that does not exceed 5 miles in length nor advance

714 contiguously to a project filed with the Commission during 2012. News reports indicate
715 that “Illinois lawmakers want to slow down the review process for a major electricity line
716 project by Ameren.”

717 **Q. WHAT ELSE DO YOU SUGGEST BE DONE IN ADDITION TO ABANDONING**
718 **THE EXPEDITED PROCEDURES OF ATXI’S PETITION?**

719 A. I respectfully suggest that the ICC place a moratorium on all new transmission line
720 projects until they may all be evaluated against one another and until their legitimate
721 necessity may be thoroughly evaluated and considered. This will provide ATXI with time
722 to return the Illinois Rivers Project to its drawing board and reengineer its project from
723 outdated 1800s technology to 21st century modern, effective, reliable, economic and
724 environmentally viable methodologies that would help ATXI turn into the successful
725 power transmission company that it aspires to be. It should adopt the professional ethics
726 principle of “informed consent” by members of the public and adopt transparency in its
727 proposed projects.

728 **Q. IS THERE ANY BASIS FOR THIS SUGGESTION?**

729 A. Yes. Please see a letter addressed to The Honorable Doug Scott, Chairman of the Illinois
730 Commerce Commission from State Senator Sue Rezin as shown in the Ragheb Family
731 Exhibit 1.9, Page 1 of 1. This letter was written in regards to the Rock Island Clean Line
732 petition. The Illinois Rivers Project and the Rock Island Clean Line project are the two
733 major statewide transmission line projects currently under consideration before the
734 Commission.

735 Additionally and to the best of my knowledge, the State of Iowa has been a pioneer and
736 already adopted a statewide and complete approach to assess all upcoming projects, and

737 the State of Wisconsin is in the midst of a legislative review of their transmission project
738 policy.

739 **Q. SHOULD ATXI'S ILLINOIS RIVERS PROJECT BE COMPLETELY**
740 **ABANDONED?**

741 A. No. We suggest that ATXI's Illinois Rivers Project be sent back to the drawing board,
742 and that all options be evaluated by ATXI's engineers. It appears that ATXI engineering
743 staff was subordinate in the presented design to the accountant staff, and that is improper.
744 They were not given the free hand in the "expedited procedure" to come out with a
745 modern-technology world-class design of a project that will be handed down to our
746 children and grandchildren. Once the ATXI engineers have had their say and have
747 improved the proposed project, the Illinois Rivers Project should be re-submitted by
748 ATXI, but made to compete on equal ground against all of the other proposed projects.
749 Thus, any advantage to being a first-mover will be eliminated, and thus, according to the
750 logic of Dr. Joskow, the line will not be deliberately undersized, and the ratepayers and
751 electricity consumers of Illinois will be properly served by the transmission line best
752 suited to their needs, and not purported to be served by a transmission line that best
753 serves the sole interests of the merchant transmission company that is able to get their
754 proposal first in line in view or pre-empting other possibly meritorious proposals. ATXI
755 has an opportunity to become a crown-jewel subsidiary of Ameren and a pride of the
756 USA transmission industry with the adoption of economic, reliable and environmentally
757 sound modern technology for the transmission of both renewable and conventional
758 energy sources. I am also sure that they can come out with a superior design that would

759 serve the public and be accepted by it on the basis of the professional ethics principle of
760 “informed consent.”

761 **Q. DO YOU HAVE ANY OTHER COMMENTS THAT YOU WOULD LIKE TO**
762 **MAKE?**

763 A. Yes. I do not believe that Ameren will be affected financially by the postponement of the
764 Illinois Rivers Project aside from losing its first mover status in the attempted preemption
765 and monopoly situation. In Ameren’s 2012 Annual Report, it was stated “We are
766 involved in legal and administrative proceedings before various courts and agencies with
767 respect to matters that arise in the ordinary course of business, some of which involve
768 substantial amounts of money. We believe that the final disposition of these proceedings,
769 except as otherwise disclosed in this report, will not have a material adverse effect on our
770 results of operations, financial position, or liquidity. Risk of loss is mitigated, in some
771 cases, by insurance or contractual or statutory indemnification. We believe that we have
772 established appropriate reserves for potential losses.”

773 I wish to include an ominous quotation from page 21 of Ameren’s 2012 Annual Report:
774 “Future investments may be affected by changes in FERC policy regarding the utilities’
775 right of first refusal to construct new transmission projects within their service territory.
776 In the future, Ameren may not be able to invest in electric transmission to the extent
777 desired.” Ameren and ATXI know that their time to freely build suboptimal transmission
778 lines is short, and they are attempting to squeeze the Illinois Rivers Project in before the
779 opportunity in current laws closes. I respectfully ask the Commission to consider all of
780 the evidence presented here, and to slow down these beginnings of a statewide

781 transmission line land-grab so that Illinois' ratepayers will be properly served by the right
782 transmission line(s).

783 On a patriotic note, please allow me to share the view held by the USA global
784 competitors about our outdated power transmission infrastructure. Commenting on the
785 recent situation in the State of New York in late October 2012 following Hurricane
786 Sandy, concerning the low-reliability disaster and failure-prone fragile electrical grid
787 system in the USA that depends on outdated overhead power lines in highly populated
788 areas, the European economic-competitor to the USA view is expressed by Fichtner *et*.
789 *al.* [Ullrich Fichtner, Hans Hoyng, Marc Hujer and Gregor Peter Schmitz, "Divided
790 States of America: Notes on the Decline of a Great Nation," Der Spiegel, November 5,
791 2012. [http://www.spiegel.de/international/world/divided-states-of-america-notes-on-the-](http://www.spiegel.de/international/world/divided-states-of-america-notes-on-the-decline-of-a-great-nation-a-865295.html)
792 [decline-of-a-great-nation-a-865295.html](http://www.spiegel.de/international/world/divided-states-of-america-notes-on-the-decline-of-a-great-nation-a-865295.html)] as:

793 "The power lines in Brooklyn and Queens, on Long Island and in New Jersey, in one of
794 the world's largest metropolitan areas, are not underground, but are still installed along a
795 fragile and confusing above-ground network supported by utility poles, the way they are
796 in *developing countries*." (emphasis added)

797 "Large parts of America's biggest city (New York) and millions of people along the East
798 Coast could now be forced to survive for days, possibly even weeks, without electricity,
799 water and heat. Many of the backup generators intended for such emergencies didn't
800 work, so that large hospitals had to be evacuated. On the one hand, these consequences of
801 the storm point to the uncontrollability of nature. On the other hand, they are signs that
802 America is no longer the great, robust global power it once was."

803

804 In response to our economic competitors, I am strongly confident that the USA can and
805 will rise to the challenge of reviving its aging infrastructure with modern, safe, reliable,
806 effective and environmentally sound engineering systems. It will remain “the great,
807 robust global power” that it has always been for the benefit of its future generations and
808 the whole world. We have an amazing opportunity here to start that return to the top.
809 Thank you very much for your time and attention.

810 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

811 A. Yes. I would like to reserve the right to submit re-direct testimony should the Petitioner
812 dispute my opinions and would be pleased to provide additional testimony in response to
813 any questions from the Illinois Commerce Commission.