

**ILLINOIS COMMERCE COMMISSION  
DOCKET NOS. 06-0070, 06-0071 and 06-0072 (CONSOLIDATED)**

**REBUTTAL TESTIMONY  
OF  
RAY WIESEHAN**

**Submitted On Behalf**

**Of**

**CENTRAL ILLINOIS LIGHT COMPANY d/b/a AMERENCILCO,  
CENTRAL ILLINOIS PUBLIC SERVICE COMPANY d/b/a AMERENCIPS and  
ILLINOIS POWER COMPANY, d/b/a AMERENIP**

**May 26, 2006**

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**REBUTTAL TESTIMONY**

**OF**

**RAY WIESEHAN**

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

A. My name is Ray Wiesehan. My business address is 1901 Chouteau Avenue, St. Louis, Missouri 63166.

**Q. What is your title, job duties and responsibilities?**

A. My current position is that of Manager - Safety and Resource Management. My current responsibilities include departmental oversight of Ameren Service Company's (Ameren) Energy Delivery Safety and Electrical Training staff, along with various engineering support services and contracting work - specifically the Construction and the Vegetation Management program. I have been employed with Ameren for more than 33 years and have held a variety of positions including several within Ameren's Vegetation Management staff.

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

A. The purpose of my rebuttal testimony is to respond to certain portions of Staff witness James D. Spencer's testimony. Primarily, I address his testimony as it relates to tree trimming related reliability issues. Mr. Craig Boland addresses several of Mr. Spencer's comments regarding reliability concerns. Mr. Allen Clapp also offers testimony with regard to Staff's interpretation of the National

23 Electrical Safety Code (NESC) Rule 218. I also respond to certain  
24 recommendations made by Staff witness Greg Rockrohr.

25 **Q. Before you proceed, can you advise the Commission of the nature and extent**  
26 **of your familiarity with tree trimming related reliability issues for the**  
27 **Ameren Companies?**

28 A. Yes. The Ameren Companies' vegetation management program's mission is to  
29 provide comprehensive vegetation management in a safe, reliable, efficient and  
30 environmentally sound manner, thus ensuring quality service to our customers.  
31 We accomplish this through the implementation of industry proven best practices  
32 into our program. In 2001 and 2002 CN Utility Consulting, an industry  
33 recognized vegetation management consulting firm, conducted the TLC Utility  
34 Vegetation Management benchmarking project. Over 60 utilities participated in  
35 the project. In August 2004 CN Utility Consulting published a report that  
36 summarizes many trends, issues and practices including a list of "Industry Best  
37 Practices." (CN Consulting is the same company that provided the August 2003  
38 black out report for FERC).

39 As the report demonstrates, Ameren incorporates many of the Vegetation  
40 Management industry best practices. Notably, public and worker safety and  
41 reliability form the core of the best practices identified in the study to which  
42 Ameren adheres. Further, the study references tracking tree related outages and  
43 the inclusion of ANSI A300 standard, hazard tree identification training and  
44 public education through participation in the Tree Line USA program, as some of  
45 the recognized industry best practices. The Tree Line USA program is sponsored

46 by the National Arbor Day Foundation. Utilities must submit an application every  
47 year and demonstrate that they have met 3 requirements: 1) Quality tree care-  
48 must incorporate ANSI A300 into your program, 2) Annual worker Training and  
49 3) Tree planting and public education. The National Arbor Day Foundation  
50 reviews the application and makes the final decisions on the award. In fact,  
51 Ameren has been a recipient of the Tree Line USA award for seven consecutive  
52 years.

53 **Q. Do you have an opinion as to the Ameren Companies' system reliability?**

54 A. Yes. The Ameren Companies have improved system reliability over the last  
55 several years with regard to tree caused outages. In 2003, all Ameren Illinois  
56 Companies combined had a total of 2,866 tree-related outages. In 2004 those  
57 outages were reduced to 2,350. This represents an 18% improvement over the  
58 2003 performance. Tree caused outages that occur as a result of major storms is  
59 included in the reported numbers.

60 **Q. Please continue.**

61 A. In 2003, tree related outages accounted for a total of 7.4% of all customer  
62 interruptions on all Ameren Illinois Company distribution systems. In 2004, tree  
63 related outages accounted for 5.4% of all customer interruptions. This represents  
64 an improvement of 27% when compared to all cause codes for years 2003 vs.  
65 years 2004. The data upon which I am relying comes directly from the ICC  
66 annual reliability assessments for years 2003 and 2004. The data that supports  
67 tree related outages includes major event days experienced in 2003 and 2004.  
68 This is significant because, as Mr. Boland noted in his testimony, storm activity

69 increased in 2004 vs. 2003. We were able to reduce tree caused outages even  
70 though there were more Major Event Days experienced on the AmerenIllinois  
71 system.

72 In conclusion, the Ameren Companies are showing improvement and our  
73 incorporation of vegetation management industry best practices is providing  
74 improved service to our customers.

75 **Q. Beginning at page 7 of his testimony, Mr. Spencer discusses**  
76 **AmerenCILCO's tree trimming activities, and states the utility does not now**  
77 **trim to avoid interference between trees and its ungrounded supply**  
78 **conductors as required by NESC Rule 218. Does AmerenCILCO trim trees**  
79 **to avoid interference between trees and its ungrounded supply conductors?**

80 A. Yes. AmerenCILCO does trim trees to avoid interference between trees and its  
81 ungrounded supply conductors. AmerenCILCO employs the same vegetation  
82 management practices as the other Ameren Companies. We continue to maintain  
83 a four-year trim cycle and manage an integrated vegetation management program  
84 that is in compliance with NESC Rule 218, and meet all the obligations as stated  
85 in 83 IL Admin Code Part 305. Specifically, the Ameren Companies are meeting  
86 their obligation to provide maximum vegetation to conductor clearance when  
87 considering the rights of property owners, public and worker safety, electric  
88 service reliability, previous pruning history, tree health, tree aesthetics and  
89 efficient work production.

90 In addition, ICC Staff's Schedule 9.09, specifically page 12 in the section titled  
91 "Tree Trimming," suggests Staff supports the fact that AmerenCILCO does trim

92 to avoid clearance between trees and ungrounded supply conductors. Staff states  
93 they are encouraged by the reduction of tree caused outages in 2004. In fact, tree  
94 caused outages were reduced from 626 in 2003 to 226 in 2004, as I previously  
95 stated and this data includes tree outages that occurred during major event days.  
96 Staff goes on to state they noted relatively few tree contacts during its 2005 circuit  
97 inspections. Results such as these would not occur if AmerenCILCO were not  
98 trimming trees to avoid interference with ungrounded supply conductors.

99 **Q. Does Mr. Spencer offer any other criticism?**

100 A. Yes. Staff states in the report outages classified as weather and unknown often  
101 involve trees, yet no evidence to support this statement is provided. Ameren  
102 disputes this claim. A recent study conducted by the Environmental Consultants  
103 Incorporated (ECI) validates the Ameren approach. ECI is a vegetation  
104 management consulting company that provides services such as program  
105 management, inventory, work management solutions and technical support. They  
106 have been in business since 1972 and were retained by AmerenCIPS in 2001 to  
107 provide field support in Southern Illinois. AmerenCILCO employed ECI in 2002  
108 to provide work load analysis. In 2003 AmerenIP provided tree samples for a  
109 study titled "Species-Specific Variation in Impedance as Related to Electrical  
110 Fault Potential," ECI conducted the study in 2003 and published results in June  
111 2004. Below are selected excerpts:

112 *"An understanding of the high impedance pathway provided by small diameter*  
113 *new growth provides an important piece of information useful in scheduling*  
114 *periodic preventive maintenance. Basically, the incidental branch-conductor*  
115 *contacts that develop as a circuit "ages" and trees grow back into the cleared*  
116 *area is of low risk to reliability. Since these new contacts do not appreciably*  
117 *effect the risk of an interruption, some level of contact can be tolerated."*

118

119

In addition, the study concludes that:

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*“these findings relative to small diameter branches need to be factored in to an understanding of the risk created by new vegetative growth contacting overhead distribution lines. Simply stated, it is unlikely that trees cause interruptions on 15kV class distribution lines by merely growing into contact with a conductor.”*

126

Ameren agrees limbs break during storms, and that trees fall onto conductors during storms, and do in fact cause outages. However, these outages are included

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in the numbers noted in Staff's testimony. The tree contacts shown on pages 7

128

and 11 of ICC Staff's Exhibit 9.9 are indicative of the type of tree contact the ECI

129

study researched, and are not typical of tree contacts that cause outages. Staff's

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conclusion that outages classified as weather and unknown often involves trees is

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inaccurate.

132

**Q. Are there standards concerning tree trimming and vegetation management?**

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A. Yes. Ameren requires contractors to trim in accordance with the ANSI A300

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standard for maintaining trees and woody plants, and has done so for many years.

135

This standard is recognized by the International Society of Arboriculture as the

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preferred method for proper tree pruning. This standard was modified in 2001 to

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include Section 5.9 which is specific to utility pruning practices. The modification

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recognizes that directional pruning for utility line clearance is an acceptable

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arboricultural practice. Contractors are also required to adhere to and abide by

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ANSI Z133.1 – 2000 which outlines the safety requirements for pruning,

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repairing, maintaining and removing trees and cutting brush.

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In addition, Ameren's Vegetation Management staff is all ISA certified arborists.

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All of the contractors' first line supervisors are also ISA certified arborists.

144 Ameren audits a minimum of 10% of all the contractors work to ensure  
145 compliance with these standards. In addition to our audit procedures, we have  
146 incorporated performance management metrics with the contractors that measure  
147 their performance in the areas of safety, reliability, customer satisfaction,  
148 production and process efficiency. Ameren implemented this program in 2003.  
149 We recognized a need to measure performance using a balanced approach. We  
150 also feel this program allows us to bench mark performance and implement  
151 improvements that can be measured for effectiveness.

152 **Q. Do you concur in the interpretation of NESC Rule 218 offered by Staff?**

153 A. No. First, Staff's interpretation infers that NESC Rule 218 states there shall never  
154 be contact between trees and electric conductors. NESC Rule 218 is a "should  
155 rule vs. a shall rule." Ameren and Staff agree in principle that "trees that may  
156 interfere with ungrounded supply conductors should be trimmed." The Ameren  
157 Companies have demonstrated this by achieving and maintaining a four-year tree  
158 trimming cycle through out their service territories. Ameren and the Staff though  
159 have different interpretations of what constitutes "interfere with" as stated in  
160 NESC Rule 218. The different interpretations lead to differing positions as to the  
161 extent and timing of the trimming to be done in order to be in compliance with  
162 NESC Rule 218.

163 Staff has taken the position that the term "interferes with" means there can be no  
164 tree contact with energized conductors at any time. Staff's position, for the first  
165 time to my knowledge, is stated in all of the recommendations in the 2004 reports,  
166 received in 2005, for all Ameren Companies: "Ameren must assure that all trees

167 in its Illinois service territory are trimmed such that there are not contacts with  
168 energized primary conductors before it returns to trim them again”.

169 Ameren’s position, as well as several industry experts, is that the term “interfere  
170 with” refers to the trees effect on the ability of the energized conductor to perform  
171 its intended function i.e. safely and reliably distribute electricity. Given this  
172 definition, it is Ameren’s position, as well as several industry experts, that some  
173 encroachment of new growth from previous trim cycles around energized  
174 conductors is not detrimental to the intended function of an electrical distribution  
175 primary conductor and is not in violation of NESC Rule 218.

176 **Q. Did the Ameren Companies respond to Staff’s commentary regarding NESC**  
177 **Rule 218?**

178 A. Yes. We provided the Staff with supporting evidence of our interpretation of  
179 NESC Rule 218. The evidence is in the form of a report titled  
180 *“NESC requirements and Practical Consideration relative to Vegetation*  
181 *Management around Over Head lines.”* This report was provided to Ameren by  
182 Clapp Research and Associates, P.C. The report was authored by Mr. Allen  
183 Clapp. Mr. Clapp is currently president of Clapp Research and Associates and a  
184 licensed professional engineer. He is a member of the NESC committee and  
185 editor of the NESC handbook. Here are selected excerpts from the study which  
186 he is introducing as part of his testimony:

187 *“It is not practical to prevent all contacts between trees and overhead*  
188 *power line conductors. This fact is intentionally recognized by the*  
189 *National Electrical Safety Code in Rule 218.*  
190

191 *Contact by leaves or small limbs with energized overhead power line*  
192 *conductors does not produce enough conductor heating to significantly*  
193 *damage the strength of the conductors.*

194  
195 *As indicated by the ECI study and the discussions above, contact by leaves*  
196 *or small limbs with energized overhead power line conductors does not*  
197 *produce enough current to operate line protection devices and interrupt*  
198 *the reliability of the line.*

199  
200 *It is not possible, much less practical, to prevent all contacts between trees*  
201 *and overhead power line conductors. However, it is practical to recognize*  
202 *growth habits of the local vegetation species and the local climates and to*  
203 *design and implement an effective vegetation management program that*  
204 *will limit the likelihood of vegetation contact to a level that (a) presents*  
205 *little effect on system reliability or conductor strength and (b) does not*  
206 *present a significant fire or personal safety hazard.”*

207  
208 In addition to Mr.Clapp’s report, Ameren also references conclusions quoted from  
209 the ECI study I discussed earlier, specifically the following:

210 *“Basically, the incidental branch conductor contacts that develop as a*  
211 *circuit “ages” and trees grow back into the cleared area is of low risk to*  
212 *reliability. Since these new contacts do not appreciably affect the risk of*  
213 *an interruption, some level of contact can be tolerated. The preventive*  
214 *maintenance cycle period can be based on an economically optimal*  
215 *period, rather than strictly on the basis of maintaining line clearance.”*

216  
217 **Q. Did Staff offer any response to the Clapp study?**

218 A. No.

219 **Q. Did Staff offer any response to the ECI Study?**

220 A. No.

221 **Q. Is there any detriment to Staff’s interpretation of NESC Rule 218?**

222 A. Yes. Staff’s interpretation would force utilities to manage a narrowed space  
223 around the primary electric conductor. The primary conductor is the wire that  
224 distributes higher voltage electricity to the transformers located on poles of the  
225 overhead distribution system. As an example Mr. Spencer refers to photos in ICC

226 Staff Exhibits 9.09 and 9.10 of new tree growth from previous trim cycles in  
227 contact or close to the conductor. Most of this growth is at the conductor height  
228 or below the conductor. As mentioned earlier research from the ECI study shows  
229 this type of growth is a low risk to reliability. The ECI study suggests that  
230 preventative maintenance cycle period can be based on an economically optimal  
231 period rather than strictly on the basis of maintaining line clearance.

232 The Ameren Companies could trim this growth more frequently; however, at  
233 current funding levels we would be forced to manage a narrower window of  
234 around the conductor, i.e more time and expense incurred. Consequently, we  
235 would not pull as much growth from overhanging branches as we currently do nor  
236 remove as many volunteer or trapped trees. This would lead to more trees having  
237 to be trimmed and a greater potential for overhanging limbs to break and contact  
238 the conductor, causing greater safety concerns to the general public and utility  
239 workers and poorer reliability performance. This quote from the ECI study  
240 supports our view:

241 *“Branch diameter was shown to play a major role in conductivity, with*  
242 *the largest branches being much more conductive than small shoots. This*  
243 *work also suggests that the majorities of tree-to-conductor contacts result*  
244 *in high impedance faults of low current, and are relatively low risk to*  
245 *reliability.”*

246  
247 **Q. Are there any other concerns?**

248 A. Yes. By not controlling new volunteer trees and brush, we will have more trees to  
249 trim in the future. This will increase the cost and the resources required to  
250 maintain the system. Qualified trimming personnel are currently at a premium as  
251 are many skilled craftsmen. It would take several years to recruit and train new

252 personnel. We would also have to take into consideration the impact on customer  
253 satisfaction. We would be on the customer's property more frequently, with no  
254 evidence of any enhanced benefit with regard to safety and improved reliability.  
255 In addition, we will be wounding trees more frequently with increased pruning  
256 and this could inhibit the trees' ability to properly compartmentalize the wound.  
257 This leads to an increase in stress on the trees, which in turn causes declining  
258 health to tree populations near the conductors, which again comes back to public  
259 safety concerns, reduced reliability and increased cost.

260 **Q. Mr. Spencer concludes Staff's new approach regarding NESC Rule 218 will**  
261 **not have a significant impact on tree trimming costs. Do you agree?**

262 A. Absolutely not. Notably, he offers no support in his testimony for this claim.  
263 First, there is not a homogenous growth rate among the tree species that get  
264 trimmed every year. Some trees respond differently to pruning. In order to  
265 maintain a true no contact program, some trees may be required to be trimmed as  
266 frequently as every year. Second, the Ameren Companies would have to employ  
267 additional staff to manage the resources required to maintain a no touch program.  
268 Our cost estimates for maintaining a no touch program are based upon trimming  
269 our entire system at a minimum every two years vs. every four years, as well as  
270 continuing to do some hot spot trimming to control trees that have extremely fast  
271 growth rates. These numbers reflect only the cost for contracted services and do  
272 not include any internal loading for additional staff Ameren would have to hire to  
273 administrate a no touch program. These financial projections assume we continue  
274 to manage for removals of new trees and brush and continue to maintain our

275 current overhanging trim practices. In other words we continue to provide an  
276 integrated vegetation management program.

277 **Q. Are you able to estimate the cost impact associated with Staff's position?**

278 A. Yes. The additional cost annually to maintain a no touch program for all Ameren  
279 Companies, once that level of trimming is achieved, will be \$17,535,000. We  
280 arrived at this number by using analytics based upon the current average cost per  
281 mile of trimming for each operating company. In addition, the Ameren  
282 Companies would require four years to achieve the "no touch" condition desired  
283 by Staff. This would require an additional expenditure over and above current  
284 tree trimming costs of \$40,013,000 over the next four years. Four years is the  
285 estimated time frame we feel would be necessary to train new trimming personnel  
286 and integrate this new approach into our program. The total additional cost to  
287 achieve and maintain a "no touch" program over a four year period is  
288 \$57,548,000. These costs are hardly insignificant.

289 **Q. Do you agree with Mr. Spencer's specific recommendation to the**  
290 **Commission that Staff's no contact interpretation of NESC Rule 218 is**  
291 **proper for application in Illinois?**

292 A. No. In summary, the evidence described earlier in my testimony in the form of  
293 the ECI study and Mr. Clapp's report, including my own experience, do not  
294 support the conclusions mentioned in Mr. Spencer's testimony, specifically lines  
295 570 thru 574 where he concludes that Staff's "no contact "interpretation of NESC  
296 Rule 218 is proper for application in Illinois and is in the best interest of the  
297 citizens of the State of Illinois.

298 Ameren's conclusion is that a substantial increase in funding for all utility  
309 vegetation management programs in the State of Illinois will need to occur in  
300 order to achieve and maintain a no contact rule. This type of program will not  
301 provide any additional benefit to the residents of the State of Illinois. Ameren's  
302 current vegetation management program that incorporates recognized industry  
303 best practices and emphasizes integrated vegetation management principles is in  
304 the best interest of Ameren's customers in Illinois.

305 **Q. Mr. Rockrohr makes specific recommendations with regard to**  
306 **AmerenCILCO at page 26 of his testimony. How do you respond?**

307 A. AmerenCILCO does instruct trimming crews to trim trees to provide adequate  
308 clearance for safe and reliable electric operations. Contractors general foreman  
309 audit a minimum of two days work per month per crew. Ameren Vegetation  
310 supervisors review every audit and do field investigations on a minimum of 10%  
311 of the audits per month. The Ameren Companies do monitor the contractor's  
312 performance to ensure that proper clearance is obtained when trimming trees.

313 **Q. Does this conclude your rebuttal testimony?**

314 A. Yes.

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