

**ILLINOIS COMMERCE COMMISSION**

**DOCKET No. 12-**

**DIRECT TESTIMONY OF**

**Karen S. Pedersen, P.E.**

**Submitted On Behalf Of**

**The Adams County Property Owners & Tenant Farmers**

**I. Introduction and Witness Qualifications**

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

A. My name is Karen S. Pedersen. My business address is 2222 Linwood Dr, Cedar Falls, Iowa 50613. I am self employed doing business as Pedersen Power Solutions.

**Q. Please summarize your educational background and professional experience.**

1 A. I received a Bachelor of Science in Electrical Engineering in 1977 from Iowa State  
2 University. In 1989, I received a Master of Business Administration degree with  
3 a concentration in Economics from Bentley College, Waltham, Massachusetts. I  
4 retired from MidAmerican Energy Company May 2006 and established Pedersen  
5 Power Solutions to consult in the power industry. I was employed by  
6 MidAmerican from 1998 to 2006. I was employed by Boston Edison Company  
7 from 1984 to 1998. I was employed by Iowa Power and Light Company from  
8 1977 to 1984. My duties at MidAmerican included Senior Engineer responsible  
9 for facilities in the eastern part of the system, primarily in the Iowa/Illinois Quad  
10 Cities. In addition, I was responsible for the planning area forecast and headed a  
11 project to write the operating guides for over 300 electric substations. My duties  
12 at Boston Edison Company included Senior Research Engineer in Rates, Senior  
13 Engineer in Electric System Planning and Principal Engineer in Marketing. In  
14 Planning I was responsible for facilities in the western section of the system  
15 referred to as Framingham, Massachusetts. My duties at Iowa Power and Light  
16 included Electric System Planning and Load Research. I am a licensed engineer  
17 in Illinois, Iowa, and Massachusetts. (Illinois license # 062-052517, Iowa license  
18 # PE 10071 and Massachusetts license # 32371)

19 **Q. How does your educational background and experience inform this**  
20 **testimony?**

21 A. My responsibility at Boston Edison Company and later at MidAmerican Energy  
22 was to conduct studies similar to the Ameren Transmission Company of Illinois,  
23 (“ATXI”), project and propose system improvement projects that resolved loading  
24 and voltage problems for the area served.

25 **Q. What are your duties and responsibilities in your present position?**

1 A. My duty was to review the facts and state my opinion as to whether it is a good  
2 engineering practice to locate two transmission lines on the same right-of-way.

3 **Q. On whose behalf are you testifying?**

4 A. I am testifying on behalf of the Adams County Property Owners & Tenant  
5 Farmers (“ACPO”)

6 **II. Purpose and Scope**

7 **Q. Are you familiar with the Petition filed by Ameren Transmission Company  
8 of Illinois, (“ATXI”) in this proceeding?**

9 A. Yes, On November 7, 2013 Pursuant to Section 8-406.1 of the Illinois Public  
10 Utilities Act (“Act”), 220 ILCS 5/8-406.1, Ameren Transmission Company of  
11 Illinois (“ATXI” or the “Company”) hereby petitioned the Illinois Commerce  
12 Commission (“Commission”) for issuance of a Certificate of Public Convenience  
13 and Necessity (“Certificate”) authorizing ATXI to construct, operate and maintain  
14 a new 345 kV electric transmission line (“Transmission Line”) and related  
15 facilities, including certain new or expanded substations, within portions of the  
16 State of Illinois. This Petition referred to the Transmission Line and related  
17 facilities collectively as the “Project” or “Illinois Rivers Project.” ATXI also  
18 requested issuance of an order pursuant to Sections 8-406.1(i) and 8-503 of the  
19 Act, 220 ILCS 5/8-406.1(i) and 5/8-503, authorizing or directing construction of  
20 the Project.

21 **Q. What is the purpose of your testimony as it relates to this Petition?**

22 A. The purpose of my testimony is to state that it is acceptable engineering practice  
23 to place two transmission lines on the same right-of-way.

24 **Q. What does your testimony conclude?**

1 A. The option of placing the 345 kV transmission line in parallel with existing 138  
2 kV transmission line is an acceptable option and should be considered along with  
3 the options proposed by the company. The decision should be considered based  
4 on reliability, cost of construction, cost of reinforcements required, impact on the  
5 environment and its improvement to system performance.

6 **Q. What is the basis for your evaluation?**

7 A. The basis and reasons for my opinion(s) are premised upon my education,  
8 training, experience, knowledge of the utility industry.  
9 As an electric system planner in 3 electric utilities in Iowa and Massachusetts, I  
10 worked in the Electric System Planning departments.  
11 A system planner should consider all options available that would solve the  
12 problem being addressed that balances reliability, economics (least cost),  
13 environmental, and societal concerns. It should meet the following:  
14 • It solves the system voltage or overloading being addressed.  
15 • A preliminary rough cost of construction and equipment estimate is  
16 considered.  
17 • It meets regulatory and safety requirements.  
18 • Endangered species habitat must be considered.  
19 • Reliability, economics, and other environmental concerns should be balanced  
20 to find the best solution for the customers.  
21 Constructing two transmission lines on the same right-of-way has reliability  
22 concerns. There is the concern that if one line fails, it could take out the other  
23 line. For example, a line pole could fall into the other line. And weather events  
24 such as tornadoes or gales could damage both lines.

1 Utilities today minimize one of these concerns by replacing aging poles before  
2 they fail. Having said this, a new pole will probably fail in a tornado. The  
3 probability of a tornado happening in the Midwest is a given. The probability of  
4 the tornado destroying any one line is very low. In the Midwest winter ice storms are  
5 also a concern. The line may fail under the weight of ice, but if that happened, both  
6 pole lines will fail. This is true if the lines are 50 feet apart, one mile apart or 3 miles  
7 apart.

8 The alternative of constructing the 345 kV transmission line on the right-of way in  
9 parallel with the 138 kV transmission line would have been considered during the  
10 system analysis stage of the study. This would have been done during the development  
11 of contingency lists and scenarios," 2.10. When running cases in the analysis, both lines  
12 would be considered outaged". NERC (North American Electric Reliability Council)  
13 Category C - (2). Multiple Element Contingencies specify this requirement and the  
14 method of analysis. The result of the analysis would indicate what system  
15 reinforcements, if any, would be required to be made.

16 While this could require additional construction, it could cost less to construct a line on  
17 an existing ROW. It would leave less of a footprint on the landscape, and it would have  
18 less of an impact on wildlife, property owners, farming operations, and customers.

19 Utilities should be cognizant of their effect on the environment, the endangered species,  
20 as well as their customers. Placing transmission lines through residential  
21 neighborhoods and the effect on the environment is always an important consideration.

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

23 **A. Yes**