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Witness: Dr. Dennis Smith, D.O.  
Sponsoring Party: Neighbors United Against  
Ameren's Power Line  
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**MISSOURI PUBLIC SERVICE COMMISSION**

**CASE NO. EA-2015-0146**

**REBUTTAL TESTIMONY**

**OF**

**DR. DENNIS SMITH, D.O.**

**ON BEHALF OF**

**NEIGHBORS UNITED AGAINST AMEREN'S POWER LINE**

**October 21, 2015**



1           **Q.     Please state your name and where you reside.**

2           A.     Dennis Smith. I live in Moberly, Missouri.

3           **Q.     By whom are you employed, and in what capacity?**

4           A.     I am employed as a physician and Medical Director of the Emergency Department, at  
5 the Moberly Regional Medical Center, Moberly, Missouri.

6           **Q.     What is your educational background?**

7           A.     I received a degree of Doctor of Osteopathic Medicine from Des Moines University in  
8 1994. I completed a residency in Emergency Medicine at Darnall Army Hospital, Ft. Hood, Texas, in  
9 1997 and I am Board Certified in Emergency Medicine by the American Board of Emergency  
10 Medicine. As a military emergency physician, I had extensive training in chemical, biological,  
11 radiation and non-ionizing radiation warfare and casualties. A copy of my CV is attached as  
12 **Schedule DS-01** to my testimony.

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

14          A.     I have been asked to address the unacceptable health risks to the people in the path of  
15 the proposed Ameren Transmission Company of Illinois (ATXI) 345kV AC transmission line in  
16 North East Missouri. While industry and its supporters downplay the risk of EMF to health, there  
17 are recent peer reviewed studies that support prior studies showing adverse health effects. Since  
18 people in the path of High Voltage Overhead Lines live their lives near the lines on a daily basis and  
19 in some cases 24 hours per day, the burden of proof that they will not be harmed should be  
20 overwhelmingly on the agency that wants to construct a line that will expose them to health dangers  
21 on their own property against their will.

22          **Q.     Have you testified in other proceedings involving EMF?**

23          A.     Yes. On September 15, 2014, I submitted testimony to the Missouri Public Service  
24 Commission regarding a proposed high voltage DC line, Grain Belt Express, Case No. EA-2014-  
25 0207.

1           **Q. Do you have evidence to refute the claim that the World Health**  
2 **Organization (WHO) does not confirm the existence of any health consequences from**  
3 **exposure to low level EMFs?**

4           A. First of all the above statement is double speak. Ameren states in literature  
5 available on their internet site that the World Health Organization (WHO) does not confirm  
6 the existence of any health consequences from exposure to low level EMFs. **Schedule DS-**  
7 **02.** While that statement is taken from the WHO literature, it fails to show that ongoing  
8 concerns about adverse health effects have triggered the WHO to call for research in  
9 multiple health areas. The 2007 WHO Research Agenda for Extremely Low Frequency  
10 Fields calls for additional research in multiple areas of health and places High Priority on  
11 several of those areas, which include childhood brain tumor studies, childhood leukemia, and  
12 amyotrophic lateral sclerosis. **Schedule DS-03.** Quotes from the call for additional research  
13 include the following:

- 14           • "Several studies have observed an increased risk of amyotrophic  
15 lateral sclerosis in 'electric occupations'."
- 16           • "There is some evidence that the risk of miscarriage may be affected by  
17 ELF magnetic fields exposure."
- 18           • "For Alzheimer's disease, it remains a question whether ELF magnetic  
19 fields constitute a risk factor."

20  
21 The statements in the WHO's own call for research certainly is enough to make a reasonable  
22 person want to avoid exposure to EMFs.

23           **Q. Are there other agencies publishing concerns about exposure to EMFs?**

24           A. There is enough evidence linking EMF exposure from High Voltage Overhead  
25 Lines (HVOL) to childhood leukemia and other health problems such as breast cancer to  
26 cause the International Agency for Research on Cancer (IARC) to list EMF as a Group 2B  
27 carcinogen risk.           **Schedule DS-04.**

1           **Q.    Is there any recent research that demonstrates damage at a cellular level**  
2 **done by EMF?**

3           A.    One of the arguments against EMFs causing cancer has been that there has  
4 been no plausible explanation for the causation of cancer. Since cancer is generally believed  
5 to be caused by DNA damage, any EMF induced effect on DNA provides the plausible  
6 explanation that has been reported missing by the WHO. Low levels of environmental EMF  
7 penetrate the nucleus of a cell inducing a DNA stress response. This is the same stress  
8 response generated when the body is exposed to toxins or extreme heat. See generally, Blank  
9 & Goodman, Electromagnetic fields stress living cells, Pathophysiology 16 (2009) 71-78.  
10 The study by Blank & Goodman demonstrated that cells can be affected at energy levels as  
11 low as 0.5  $\mu$ T to 1  $\mu$ T (5-10mG). ATXI reports, "Ameren levels at the edge of Right-of  
12 Way for 345kV transmission lines (75ft) are typically at or below 90 mG." The exposure  
13 quoted by ATXI is 9-18 times greater than the level of energy found to interact with the  
14 DNA of cells.

15 **Q. Is there any new evidence linking EMF to childhood leukemia?**

16 A. In 1979 Nancy Wertheimer and ED Leeper were the first authors to link childhood cancer  
17 and high voltage AC lines. Industry has often faulted the research in this area as showing  
18 bias or having study sizes too small to be valid A 2013 British Journal of Cancer study of  
19 2,779 cases of childhood acute leukemia and 30,000 controls generated additional findings  
20 and support to previous studies linking the cancer to EMF exposure. This study had both  
21 numbers and efforts to eliminate any previous bias. **Schedule DS-06.**

22           **Q.    Is there any evidence of long term health effects other than**  
23 **cancer?**

24           A. In 2013, an article in the Journal of Cellular and Molecular Medicine

1 reported both therapeutic and harmful effects of exposure to EMF. Bone growth stimulation  
2 and DNA breaks through stimulation of Voltage Gated Calcium Channels (VGCCs) were  
3 demonstrated. Bone growth can be a long term health benefit; however, DNA breaks are  
4 generally felt to be related to cancer formation. **Schedule DS-07.**

5 **Q. Is the information you present enough to dispute the safety of the 345,000-**  
6 **volt transmission line proposed by ATXI?**

7 A. ATXI's website documents quote only three (3) sources to cite the safety of the  
8 proposed line. One of the sources is the WHO. The WHO double speaks the safety issue as  
9 reported previously in my testimony. While the WHO is a very important organization in world  
10 health matters, it is not an infallible organization as demonstrated in 2014 by its utter failure to  
11 identify the dangers of the EBOLA outbreak. One only has to do a quick search of world news  
12 organizations on that topic to see the failure to identify the risk. Another citation by ATXI is the  
13 Environmental Protection Agency. We have seen that agencies failure to identify the risk of its  
14 activities in the 2015 Colorado mine clean up activity. This too is a organization that does great  
15 work, yet it can make mistakes. My summary of information disputing the safety of the  
16 proposed line is short and there are many more studies available on EMFs. As a busy physician,  
17 I am only pointing out that there is evidence to raise concern for the health of people in the path  
18 of the proposed line.

19 **Q. What is your conclusion?**

20 A. People in the path of the proposed project have legitimate fears about the possible  
21 adverse health effects. Eminent domain is necessary in some cases to provide needed services to  
22 a population. In the case of ATXI's line, the industry is proposing to put a group of people at  
23 risk on their own properties, in their own homes, and in some cases children in their schools.

1 ATXI attempts to minimize the risk using statements from the WHO or Environmental  
2 Protection Agency; however there is evidence that there are real health risks. People should not  
3 be forced to expose themselves to that risk just because they live, attend school, or work in the  
4 path of a line. Eminent domain use would give the people no choice about exposure that is not  
5 providing electricity for their comfort or commerce. The WHO comments in some of its  
6 literature that even if risk is proven, it is minimal. No one would consider the risk insignificant  
7 if his/her child or grandchild is the one affected by a disease such as childhood leukemia. No  
8 one should be forced against their will to expose their family to any entity they fear on the  
9 property they have toiled to purchase and maintain.

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

11 A. Yes it does. Thank you.