

**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Application of Transource Pennsylvania, :  
LLC filed Pursuant to 52 Pa. Code Chapter :  
57, Subchapter G, for Approval of the Siting :           Docket No. A-2017-\_\_\_\_\_  
and Construction of the 230 kV Transmission :  
Line Associated with the **Independence** :  
**Energy Connection-West Project** in :  
Portions of Franklin County, Pennsylvania :

**Transource Pennsylvania, LLC  
Independence Energy Connection-West Project**

**Statement No. 5**

**Written Direct Testimony of  
Kent M. Herzog**

**Topics Addressed:   Design and Safety Features of the IEC-West Project**

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

2 A. My name is Kent M. Herzog. My business address is Burns & McDonnell, 9400 Ward  
3 Parkway, Kansas City, MO 64114.

4  
5 **Q. By whom are you employed?**

6 A. I am employed by Burns & McDonnell Engineering Company, Inc. (“BMcD”) as a  
7 Project Manager.

8  
9 **Q. Please provide a summary of your education and professional work experience.**

10 A. I earned a Bachelor’s degree in Electrical Engineering from the University of Nebraska –  
11 Lincoln in 2000 and a Master’s degree in Business Administration from the University of  
12 Nebraska – Omaha in 2004. I am a registered Professional Engineering in the State of  
13 Nebraska and a certified Project Management Professional. From 2000 until 2014 I  
14 worked for Omaha Public Power District in a series of positions, including: Distribution  
15 Planning Engineer, Transmission Planning Engineer, Project Manager, Transmission  
16 Engineering Supervisor and Transmission Engineering and T&D Land Rights Manager.  
17 From 2014 until present time I have been employed by BMcD as a Project Manager.

18  
19 **Q. What are your responsibilities in connection with the Independence Energy  
20 Connection Project (“IEC Project”)?**

21 A. I oversee the services that BMcD is providing to Transource Pennsylvania, LLC  
22 (“Transource PA”) on the IEC Project.

23

1 **Q. What is the purpose of your direct testimony in this proceeding?**

2 A. First, I will explain the major design features of the transmission lines associated with the  
3 proposed new double-circuit Rice-Ringgold 230 kV Transmission Line associated with  
4 the Independence Energy Connection-West Project (hereinafter, the “IEC-West Project”).  
5 Second, I will explain the safety features incorporated into the design of the IEC Project.

6

7 **Q. Please describe the portions of the Siting Application that you are sponsoring.**

8 A. I am sponsoring Attachment 4, the Engineering Description.

9

10 **Q. Please provide an overview of the IEC Project.**

11 A. As explained in the written direct testimony of Company witness Mr. Kamran Ali  
12 (Transource PA Statement No. 2) and Mr. Paul F. McGlynn (Transource PA Statement  
13 No. 3), PJM identified a need to alleviate transmission congestion constraints in  
14 Pennsylvania, Maryland, West Virginia, and Virginia. To address these congestion  
15 constraints, PJM approved “Project 9A” as Baseline Upgrade Numbers b2743 and b2752.  
16 The IEC Project is a major component of the PJM-approved Project 9A.<sup>1</sup>

17 The IEC Project approved by PJM involves: (i) construction of two new  
18 substations in Pennsylvania, the Rice Substation and the Furnace Run Substation; and (ii)  
19 construction of two new overhead double-circuit 230 kV interstate transmission lines, the  
20 Rice-Ringgold 230 kV Transmission Line and the Furnace Run-Conastone 230 kV  
21 Transmission Line.

---

<sup>1</sup> Project 9A also involves upgrades at existing transmission facilities in Pennsylvania and Maryland, which are the responsibility of other incumbent entities. The upgrades to existing facilities, while not part of the IEC Project, are inter-dependent components of the solution approved by PJM, and are described in more detail in Mr. Ali’s testimony (Transource PA Statement No. 2).

1           Upon receipt of all necessary approvals, the new Rice-Ringgold 230 kV  
2           Transmission Line will extend approximately 29 miles, connecting the existing Ringgold  
3           Substation located near Smithsburg, Washington County, Maryland, and the new Rice  
4           Substation to be located in Franklin County, Pennsylvania. This transmission line project  
5           is referred to as Independence Energy Connection-West Project (“IEC-West Project”)  
6           and is the subject of this Siting Application.

7           Upon receipt of all necessary approvals, the new Furnace Run-Conastone 230 kV  
8           Transmission Line will extend approximately 16 miles, connecting the existing  
9           Conastone Substation located near Norrisville, Harford County, Maryland, and the new  
10          Furnace Run Substation to be located in York County, Pennsylvania. This transmission  
11          line project is referred to as Independence Energy Connection-East Project (“IEC-East  
12          Project”) and is the subject of a separately filed Siting Application.

13          As further explained by Mr. Kamran Ali (Transource PA Statement No. 2),  
14          Transource PA is obligated and responsible for the construction, ownership, maintenance,  
15          and operation of the two new substations in Pennsylvania; and the Pennsylvania portion  
16          of the two new interstate transmission lines between Maryland and Pennsylvania.  
17          Transource PA’s affiliate, Transource Maryland, LLC (“Transource MD”), is obligated  
18          and responsible for the construction, ownership, maintenance, and operation of the  
19          Maryland portion of the two new interstate transmission lines between Maryland and  
20          Pennsylvania.

1 **Q. What is the National Electrical Safety Code?**

2 A. The National Electrical Safety Code (“NESC”) is a set of rules designed to safeguard  
3 people during the installation, operation, and maintenance of electric power lines. The  
4 NESC contains the basic provisions considered necessary for the safety of employees and  
5 the public. Although it is not intended as a design specification, its provisions establish  
6 minimum design requirements.

7

8 **Q. Will the transmission lines for the IEC Project comply with the NESC standards?**

9 A. Yes.

10

11 **Q. Please explain the safety features incorporated into the design of the 230 kV  
12 transmission lines associated with the IEC-West Project.**

13 A. For the transmission lines associated with the IEC-West Project, Transource PA has  
14 developed design specifications and safety rules which meet or surpass all requirements  
15 specified by the NESC. A detailed description of the project’s design and safety  
16 specifications and how they meet the NESC standards can be found in Attachment 4 to  
17 the Application.

18 In addition to meeting the NESC standards the line will also be designed to meet  
19 the recommendations outlined in the American Society of Civil Engineers (ASCE)  
20 Manual 74 (“Guidelines for Electrical Transmission Line Structural Loading”). To  
21 facilitate safe operation of the line, high speed line protection will be installed, de-  
22 energizing the line nearly instantaneously if there were to be an operational problem.

1           Pertaining to occupational safety for construction, maintenance, and related  
2 activities, Transource PA conducts evaluations of contractors that exceed those required  
3 by law. Transource PA conducts safety and health audits on potential contractors.  
4 During these audits, Transource PA not only looks for compliance with Federal, State,  
5 and Local regulations, but also assesses the overall safety and health culture of the  
6 contractor. Once the contractor has satisfactorily completed the audit, they are eligible to  
7 be awarded work that is within the scope of services provided by that particular  
8 contractor.

9           A description of the safety features incorporated into the design of the 230 kV  
10 transmission lines associated with the IEC-West Project is provided in Attachment 5 to  
11 the Siting Application.

12  
13 **Q. Please describe the design of the transmission lines associated with the IEC-West**  
14 **Project?**

15 A. The Rice-Ringgold 230 kV Transmission Line associated with the IEC-West Project will  
16 be a 230 kV double-circuit transmission line. The 230 kV double-circuit design will  
17 utilize twelve power conductors (two in each of the six phase positions) and two  
18 overhead ground wires. The power conductors will be 795 kcmil<sup>2</sup> 26/7 Aluminum  
19 Conductor Steel Supported (“ACSS”) “Drake”. The overhead ground wires will provide  
20 lightning protection and in some cases communication between circuit breakers that  
21 remove the line from service should a fault on the line be detected.

22  

---

<sup>2</sup> A kcmil is a thousand circular mils. A circular mil is the cross-sectional area of a wire one mil in diameter, where 1 kcmil = 0.5067 mm<sup>2</sup>.

1 **Q. Please describe the principal types of 230 kV structures that will be used for the**  
2 **Pennsylvania portion of the IEC-West Project.**

3 A. The Pennsylvania portion of the new Rice-Ringgold 230 kV Transmission Line will be  
4 sited to extend approximately 24.4 miles between the Maryland border and the new Rice  
5 Substation to be located in Franklin County, Pennsylvania. The Pennsylvania portion of  
6 the new IEC-West Project will require the installation of approximately 162 structures  
7 with an average height of 135 feet. Approximately 2 to 4 structures may be taller  
8 structures (up to approximately 250' feet) to ensure appropriate clearances for certain  
9 structures and other utility facilities. The spans between the structures will be  
10 approximately 800 feet.

11 The Pennsylvania portion of the new IEC-West Project will largely consist of  
12 tubular steel monopole and multi-pole structures. In certain areas, steel lattice structure  
13 may be used to better accommodate topographical, construction, or land use constraints.  
14 Typical design diagrams similar to those that will be installed for the IEC-West Project  
15 are included in Attachment 4.

16  
17 **Q. Does this complete your direct testimony?**

18 A. Yes, it does. If necessary, I will supplement my testimony if and as additional issues  
19 arise during the course of this proceeding.