

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

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

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

Statement No. 5

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

Topics Addressed: Design and Safety Features of the IEC-East 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 Furnace Run-Conastone 230 kV Transmission Line
4 associated with the Independence Energy Connection-East Project (hereinafter, the “IEC-
5 East Project”). Second, I will explain the safety features incorporated into the design of
6 the IEC Project.

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

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

10

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

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

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

¹ 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 Rice-Ringgold 230 kV Transmission Line and the Furnace Run-Conastone 230 kV
2 Transmission Line.

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

9 Upon receipt of all necessary approvals, the new Furnace Run-Conastone 230 kV
10 Transmission Line will extend approximately 15.8 miles, connecting the existing
11 Conastone Substation located near Norrisville, Harford County, Maryland, and the new
12 Furnace Run Substation to be located in York County, Pennsylvania. This transmission
13 line project is referred to as Independence Energy Connection-West Project (“IEC-East
14 Project”) and is the subject of this Siting Application.

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

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Q. What is the National Electrical Safety Code?

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

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

A. Yes.

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

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

In addition to meeting the NESC standards the line will also be designed to meet the recommendations outlined in the American Society of Civil Engineers (ASCE) Manual 74 (“Guidelines for Electrical Transmission Line Structural Loading”). To facilitate safe operation of the line, high speed line protection will be installed, de-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-East Project is provided in Attachment 5 to the
11 Siting Application.

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

15 A. The Furnace Run-Conastone 230 kV Transmission Line associated with the IEC-East
16 Project will be a 230 kV double-circuit transmission line. The 230 kV double-circuit
17 design will utilize twelve power conductors (two in each of the six phase positions) and
18 two overhead ground wires. The power conductors will be 795 kcmil² 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.

² 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 mm².

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

A. The Pennsylvania portion of the new Furnace Run-Conastone 230 kV Transmission Line will be sited to extend approximately 12.7 miles between the Maryland border and the new Furnace Run Substation to be located in York County, Pennsylvania. The Pennsylvania portion of the new IEC-East Project will require the installation of approximately 71 structures with an average height of 135 feet. Approximately 2 to 4 structures may be taller structures (up to approximately 250' feet) to ensure appropriate clearances for certain structures and other utility facilities. The spans between the structures will be approximately 950 feet.

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

Q. Does this complete your direct testimony?

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