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# Exhibit No. 106

Staff – Exhibit 106  
Michael L. Rush  
Rebuttal Testimony  
File No. EA-2023-0017

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**MISSOURI PUBLIC SERVICE COMMISSION**  
**INDUSTRY ANALYSIS DIVISION**

**REBUTTAL TESTIMONY**  
**OF**  
**MICHAEL L RUSH, PE**

**GRAIN BELT EXPRESS, LLC**  
**CASE NO. EA-2023-0017**

*Jefferson City, Missouri*  
*April 2023*

1 **DIRECT TESTIMONY**

2 **OF**

3 **MICHAEL L. RUSH, PE**

4 **GRAIN BELT EXPRESS, LLC**

5 **CASE NO. EA-2023-0017**

6 Q. Please state your name and business address.

7 A. Michael L Rush, PE, Designated Principal Assistant, Industry Analysis  
8 Division, Missouri Public Service Commission, 200 Madison Street, Jefferson City MO, 65102.  
9 My functional title is Critical Infrastructure Security Engineer.

10 Q. What are your qualifications and experience?

11 A. I hold both a bachelor's degree in Mechanical Engineering and a  
12 master's degree in Computer Science from Arizona State University. I have been a  
13 practicing professional engineer since 1995 and have been in my present position since  
14 November 2021. I am responsible for interfacing with Missouri utilities on physical and  
15 cyber-security issues. I am also the critical infrastructure intelligence liaison to the  
16 Missouri Information Analysis Center ("MIAC") as well as a lead responder for the  
17 energy sector emergency response function at the Missouri State Emergency Management  
18 Agency ("SEMA"). I previously held PSC staff positions in the Industry Analysis  
19 Department and the Procurement Analysis Unit. Other experience includes employment as  
20 an Engineering Research Scientist at Lincoln University of Missouri, a civilian instructor at  
21 the Army Corps of Engineers' Prime Power School, a Researcher at the Arizona State  
22 University Center for Cognitive Ubiquitous Computing ("CUbiC"), and a Sr. Project Engineer  
23 at the General Motors Corporation.

1 Q. Have you previously filed testimony with the Missouri Public Service  
2 Commission?

3 A. Yes, in cases GR-2015-0271, GA-2017-0016, AW-2015-0203, and  
4 ER-2018-0145, ER-2018-0146, ER-2022-0129, and ER-2022-0130.

5 Q. What is the purpose of your testimony?

6 A. My testimony is in response to the direct testimony of Jonathon Monken and  
7 focuses on the relationship between national security and the Grain Belt Express (GBE) line.

8 Q. What is National Security?

9 A. National Security is a generally nebulous single term that melds many facets of  
10 the safety and security of a nation state. However, the Code of Federal Regulations definition  
11 in 5 CFR § 1400.102 is: (3) National security refers to those activities which are directly  
12 concerned with the foreign relations of the United States, or protection of the Nation from  
13 internal subversion, foreign aggression, or terrorism.

14 Q. What are some of the facets that could be included in the term National Security?

15 A. Many topics could be included in the definition of national security such as:

16 (1) The ability to maintain the physical integrity of the nation-state and its  
17 territories;

18 (2) The ability to avoid war and prevail in war should such occur;

19 (3) The ability to be free from foreign dictate by maintaining the ability to  
20 produce items needed to maintain the nation state;

21 (4) The ability to preserve its nature, institutions, economic structure, and  
22 governance given attempts of outside disruption.

23 Without question, there are also other items that could fall under the umbrella term  
24 “national security” given the many definitions that have been posited over time.

1 Q. Is the GBE project unique when viewed from the perspective of ‘national  
2 security’ as opposed to other transmission projects?

3 A. No. While a functioning, efficient and secure transmission system is  
4 definitely a matter of national security, to claim GBE is somehow uniquely important and a  
5 “national security imperative” is not a reasonable assertion. However, if GBE were to come to  
6 fruition and become integrated into the transmission system, it would then be a matter of  
7 national security as it is part of the transmission system, just like any other new transmission  
8 resource, and not because it possesses some unique feature.

9 Q. What does the testimony of Mr. Monken say about the GBE CCN amendment  
10 and national security?

11 A. Nothing. The stated purpose of Mr. Monken’s testimony is to provide an  
12 assessment of the national security value of GBE and associated facilities including converter  
13 stations and connector lines proposed in the CCN amendment<sup>1</sup>. While Mr. Monken goes into  
14 detail as to the benefits and advantages of HVDC transmission in general, nowhere is the  
15 proposed amendment to the CCN addressed in the testimony. The testimony focuses more on  
16 the need for HVDC transmission to replace the inadequate status quo transmission planning  
17 process of the existing and serviceable but inadequate transmission system<sup>2</sup>.

18 Q. What does the testimony of Mr. Monken say about GBE and national security?

19 A. Mr. Monken discusses HVDC transmission in detail and the large number of  
20 *national security related facilities* (referred to simply as “facilities” going forward) that could  
21 potentially benefit from GBE, an already approved project. However, Mr. Monken does not

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<sup>1</sup> Page 4, Direct Testimony of Jonathon Monken.

<sup>2</sup> Page 6, Direct Testimony of Jonathon Monken.

1 detail any facilities that currently have an agreement to take power from the already approved  
2 project. Additionally, when asked which facilities had expressed support for GBE in Data  
3 Request No. 0038, Mr. Monken replied that none had made public statements supporting  
4 GBE and in addition, gave other precedent examples where other facilities previously have  
5 made public statements supporting infrastructure projects in their local areas.

6 Q. What else does the testimony of Mr. Monken say about GBE and  
7 national security?

8 A. Mr. Monken also makes several claims in his testimony on how the  
9 already approved GBE relates to national security. In the following, I address a couple of  
10 those claims individually.

- 11 (1) GBE is a national security imperative as it is imperative to support the  
12 readiness of facilities across the nation.

13 While I would agree that it is imperative to support facilities, there is no  
14 specific rationale given in the testimony that GBE would provide this support  
15 uniquely as opposed to any other transmission project similarly situated. If  
16 one project would provide power to a facility as opposed to another, is that  
17 project now more of a national security matter than the other? With an  
18 expansive enough definition of national security, it could be argued that any  
19 project supporting any facility be a matter of national security. This would  
20 remand the definition of national security to the most mundane of topics and  
21 it would lose all importance.

- 22 (2) Energy needed to execute essential missions is a modern security risk.<sup>3</sup>

23 This is without question a true statement. Energy is necessary to any mission  
24 and is a risk in need of consideration. Energy has always been, and always  
25 will be, a target and a risk.

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<sup>3</sup> Page 3, Schedule JM-2

1           (3) DC transmission has technical advantages for moving power between  
2           balancing authorities.<sup>4</sup>

3           This again is a true statement for any HVDC bridge between balancing  
4           authorities given the nature of phase and voltage across boundaries. This is  
5           not a unique feature of GBE and the same conversion/rectification  
6           infrastructure needed to construct GBE would be used to provide those same  
7           advantages between balancing authorities if an alternative were so  
8           constructed.

9           (4) Enhanced Supply Chain: Reduced dependence on components from  
10          adversarial nations.<sup>5</sup>

11          While a reduction in dependence on any foreign nation for any infrastructure  
12          related material is definitely in the interest of national security, there is still a  
13          dependence on foreign entities for materials and supplies independent of the  
14          type of infrastructure project. The claim made that fewer transformers will  
15          be needed for HVDC as opposed to traditional AC transmission obscures the  
16          fact that rectification/converter stations will now be required at all takeoff  
17          points as opposed to just transformers. In addition, transformers are still  
18          required at each sub-transmission takeoff point irrespective of the underlying  
19          technology of the transmission line and would therefore be subject to the same  
20          sourcing dependencies.

21          Q.     Would GBE provide energy in such a unique way that it would be less of a risk  
22          or not targeted as opposed to any other similarly situated infrastructure?

23          A.     No. The transmission line being proposed by GBE in this case is similar to other  
24          transmission projects and thus does not have any special characteristics that would make it less  
25          risky or subject to being targeted by an adversary.

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<sup>4</sup> Page 15, Schedule JM-2

<sup>5</sup> Page 14, Schedule JM-2

1           Q.     Does the information provided by GBE through the testimony of Mr. Monken  
2 support approval of GBE's amended application?

3           A.     No. While Mr. Monken spells out in his testimony the need for consideration of  
4 national security concerns, those ideas are broad and all encompassing. Those concerns are not  
5 reliant on the approval and completion of the amended features of this project. As noted above,  
6 the benefits of the expansion of the CCN could be accomplished in various other ways and thus  
7 does not support this CCN amendment as necessary for national security interests.

8           In the future, additional infrastructure will be required to move distantly generated  
9 power to major load centers. However, the need for that additional infrastructure does not  
10 support the conclusion that the approval of GBE amendment is a national security imperative  
11 no more or less than any other infrastructure project that performs a similar function.

12           Decisions close on balance one-way or the other are sometimes made in deference to  
13 nebulous concepts such as 'national security'. The GBE amendment case, pro or con, should  
14 be decided upon the financial, operational and capacity merits and not in deference a concept  
15 difficult to define and harder to measure. GBE is not a project proposed for nebulous reasons.  
16 GBE is either a necessary capacity addition and an asset to a stable, cost effective and efficient  
17 grid or it is not. That is the basis upon which the commission should decide the issue and not  
18 on other, more nebulous metrics.

19           Q.     Does this conclude your rebuttal testimony?

20           A.     Yes.



BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Application of Grain Belt )  
Express LLC for an Amendment to its ) Case No. EA-2023-0017  
Certificate of Convenience and Necessity )  
Authorizing it to Construct, Own, Operate, )  
Control, Manage, and Maintain a High Voltage, )  
Direct Current Transmission Line and )  
Associated Converter Station )

**AFFIDAVIT OF MICHAEL L. RUSH, PE**

STATE OF MISSOURI )  
 ) ss.  
COUNTY OF COLE )

COMES NOW MICHAEL L. RUSH, PE and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Rebuttal Testimony of Michael L. Rush, PE*; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

  
MICHAEL L. RUSH, PE

**JURAT**

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 17<sup>th</sup> day of April 2023.

D. SUZIE MANKIN  
Notary Public - Notary Seal  
State of Missouri  
Commissioned for Cole County  
My Commission Expires: April 04, 2025  
Commission Number: 12412070

  
Notary Public