

BEFORE THE  
PUBLIC UTILITIES COMMISSION  
STATE OF SOUTH DAKOTA

**IN THE MATTER OF THE PETITION OF TRANSCANADA KEYSTONE PIPELINE, LP  
FOR ORDER ACCEPTING CERTIFICATION OF PERMIT ISSUED IN DOCKET HP09-  
001 TO CONSTRUCT THE KEYSTONE XL PIPELINE**

DOCKET HP14-001

PREFILED TESTIMONY OF DAVID SCHRAMM  
ON BEHALF OF THE COMMISSION STAFF  
APRIL 2, 2015

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

2 A. My name is David Schramm. My business address is 28100 Torch Parkway,  
3 Warrenville, Illinois, 60555.

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

5 A. I am employed as a Vice President-Senior Project Manager by EN Engineering,  
6 an engineering and consulting firm specializing in pipeline design, codes compliance,  
7 integrity, and automation services for the oil and gas industry.

8 **Q. Please describe your educational background and professional experience.**

9 A. I hold a B.S. degree from Iowa State University (Ames, Iowa) and I am a NACE  
10 Institute No. 3178 Certified Cathodic Protection Specialist and Certified Corrosion  
11 Technologist (confirm certification at [www.naceinstitute.org](http://www.naceinstitute.org)). My professional  
12 experience consists of employment in the pipeline industry with EN Engineering, NICOR  
13 Technologies, NICOR Gas (Northern Illinois Gas), Corpro Companies, Inc., and Harco  
14 Corporation.

15

16 My responsibilities in these positions includes nearly 35-years of extensive experience  
17 in the assessment and application of pipeline integrity and corrosion control programs  
18 including: corrosion control engineering, analysis and design, process control and  
19 measurement, internal "smart" tooling, cathodic protection design, installation and  
20 maintenance, computerized close interval potential survey, direct current voltage  
21 gradient survey, telluric current monitoring, measurement and investigation, stray DC  
22 and AC interference testing and mitigation, coating selection and inspection and  
23 material selection and purchasing.

1 I am currently responsible for the technical support of the Corrosion Control and  
2 Integrity Field service offerings including: the technical oversight of project performance  
3 and standards, the development and maintenance of technical guidelines, standards  
4 and procedures, quality assurance (ISO 9001 ) for corrosion control, cathodic  
5 protection, field failure and integrity management projects and proposals, and the  
6 qualification and training of corrosion control field failure, and system integrity  
7 personnel.

8

9 Within the corrosion control and cathodic protection industry, I have served in a Chair  
10 position for NACE T-10-A-11: Gas Industry Corrosion Problems (1995 through 2001),  
11 NACE International Certification Committee (2001 through 2005), Chair and Vice-Chair  
12 for the NACE International Professional Activities Committee (PAC), and currently  
13 serving as the Chair of the NACE Institute Certification Commission.

14

15 In addition, I am a certified Craft Instructor for the National Center for Construction  
16 Education (NCCER) as it relates to the American Petroleum Institute (API) Operator  
17 Qualification Program, a Veriforce Operator Qualification Evaluator, and served as a  
18 member of numerous NACE task or industry groups including the NACE Cathodic  
19 Protection Training and Certification Program task group, the Chicago Region  
20 Committee on Underground Corrosion (CRCUC) and the Michigan Electrolysis  
21 Committee (MEC).

22

23 My resume is attached to this document as Exhibit\_\_\_DS-1.

1 **Q. On whose behalf was this testimony prepared?**

2 A. This testimony was prepared on behalf of the Staff of the South Dakota Public  
3 Utilities Commission (Staff).

4 **Q. Please state the purpose of your testimony in this proceeding.**

5 A. There are three main objectives of the Staff in this testimony. First, to ensure  
6 that the proposed changes to the Findings of Fact in the Decision, as identified by  
7 TransCanada Keystone Pipeline's (the Applicant) Tracking Table of Changes, comply  
8 with the Federal Pipeline Safety Regulations 49CFR 195, Transportation of Hazardous  
9 Liquids by Pipeline. Secondly, the objective is to ensure that the Applicant has met any  
10 new requirements imposed by the Federal Pipeline Safety Regulations 49CFR 195  
11 since the Amended Final Decision and Order was issued on June 29, 2010 with respect  
12 to the application for a permit (Permit) to construct and operate a crude oil pipeline in  
13 South Dakota. Lastly, the objective is to ensure that the amended permit conditions,  
14 and any project changes, are still able to meet the conditions upon which the permit was  
15 issued, specifically focusing on pipeline design, integrity management and compliance  
16 with PHMSA regulations (49CFR 195).

17

18 This testimony deals specifically with updates made to the project as provided by  
19 Keystone on the Tracking Table of Changes, specifically as they relate to 49 CFR Part  
20 195 Subpart H.

21 **Q. Keystone updated project specifications as they relate to Finding 68 in the**  
22 **Amended Final Decision and Order to indicate that TransCanada has experienced**  
23 **no evidence of corrosion on fusion bonded epoxy lines except for one instance**

1 **where an adjacent foreign utility interfered with the cathodic protection system.**

2 **Do requirements set forth in 49 CFR Part 195 and / or the safety measures set**  
3 **forth in the DOS Final SEIS adequately address interference currents?**

4 A. Stray DC corrosion interference testing, assessment, and mitigation is prescribed  
5 under Table 4, Special Conditions as recommended by PHMSA, page 87, item 36. The  
6 program stipulated by PHMSA should address the detection and mitigation of stray DC  
7 current effects. As interpreted, the PHMSA program requirements are considered more  
8 stringent than Part 195, Subpart H – as additional timing requirements have been  
9 established.

10 **Q. Are there any other interference conditions that might lead to the**  
11 **development of corrosion on fusion bonded epoxy coated pipelines?**

12 A. The phenomenon of AC stray current interference is becoming a more prominent  
13 concern within the industry; especially, but not exclusively, associated with FBE and/or  
14 Epoxy ARO (Abrasion Resistant Overcoat) protectively coated pipeline systems. This  
15 issue is addressed and prescribed under Table 4, Special Conditions as recommended  
16 by PHMSA, page 80, item 21. The program stipulated by PHMSA should address the  
17 detection and mitigation of stray AC current effects. As interpreted, the PHMSA  
18 program requirements stipulate that control of induced AC from parallel electric  
19 transmission lines and other interference issues (e.g., crossings, substations,  
20 transpositions or capacitive or conductive coupling (fault)) are to be incorporated into  
21 pipeline design and addressed during the construction phase. This program  
22 recommendation is also consistent with the notice contained in the DOT/OPS Advisory:  
23 68FR64189 – 11/12/2003. If not already provided, a copy of the construction

1 techniques for the mitigation of AC stray current, the testing for, engineering analysis,  
2 modeling, and mitigation design for AC interference should be made available to  
3 SDPUC for record.

4 **Q. Are there any other operational conditions that might lead to the**  
5 **development of corrosion on fusion bonded epoxy coated pipelines?**

6 A. Pipeline coating requirements are prescribed under Table 4, Special Conditions  
7 as recommended by PHMSA, page 73, item 9 and on page 74, item 10 and 11. These  
8 are considered more stringent than 195, Subpart H – as additional inspection and  
9 inspection voltages are required at both the coating mill and when coating is applied at  
10 field locations. Item 15 on page 75 addresses the impact from higher operating  
11 temperatures (120-degrees F or above) and prescribes requirements for notification and  
12 operational response and follow-up testing should this occur under defined durations.

13 **Q. Does the update made to Finding 68 violate any requirements set forth in**  
14 **49 CFR Part 195 Subpart H?**

15 A. 195.577 and 195.575 requires pipelines exposed to stray current to have a  
16 program in place to identify, test for, and minimize the detrimental effects of such  
17 currents. In addition, the design and installation of any impressed current or galvanic  
18 anode cathodic protection system must be designed to minimize any adverse effects on  
19 existing adjacent metallic structures. As such this update does not violate any  
20 requirements set forth in 49 CFR Part 195 Subpart H and does not violate the  
21 DOT/OPS Advisory: 68FR64189 – 11/12/2003 issued.

22 **Q. Does the update made to Finding 68 violate any mandates set forth in the**  
23 **original or amended permit conditions?**

1 A. As noted above, the update made to Finding 68 is adequately addressed by the  
2 incorporation of all PHMSA recommendations into the original or amended permit  
3 conditions. As such, this update does not violate any requirements set forth in the  
4 original or amended permit condition.

5 **Q. Do any of the other project changes identified in the Tracking Table of**  
6 **Changes provided by Keystone violate the mandates set forth in 49 CFR Part 195**  
7 **Subpart H?**

8 A. No they do not.

9 **Q. As they relate to 49 CFR Part 195 Subpart H, do any other project changes**  
10 **identified in the Tracking Table of Changes provided by Keystone violate the**  
11 **mandates set forth in the original or the amended Permit Conditions?**

12 A. No they do not.

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

14 A. Yes.