BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA

IN THE MATTER OF THE APPLICATION BY TRANSCANADA KEYSTONE PIPELINE, LP FOR A PERMIT UNDER THE SOUTH DAKOTA ENERGY CONVERSION AND TRANSMISSION FACILITIES ACT TO CONSTRUCT THE KEYSTONE PIPELINE PROJECT	)	HP 07-001 **REBUTTAL TESTIMONY OF MEERA KOTHARI**

1. State your name and occupation

A: Meera Kothari, Professional Engineer, TransCanada, Calgary, AB.

2. Did you provide direct testimony in this proceeding?

A. Yes.

3. In this rebuttal, to whose direct testimony are you responding?

A. I am responding to the direct testimonies of PUC Staff expert David Schramm, Edward D Miller and Curt Hohn.

4. At Question 9 of his testimony, Mr. Schramm discusses Keystone's Supervisor Qualification in the area of corrosion control. Can you comment on that?

A. Keystone will use qualified personnel from TransCanada's Asset Reliability, Engineering and Operations departments who are responsible for insuring compliance under United States Department of Transportation (US DOT) regulation 49 CFR Part 195.402(c)(3) . Supervisors are registered professional engineers or registered professional technicians who hold certifications and maintain continuing education/professional development from industry bodies such as NACE. Keystone will meet the requirement of US DOT 49 CFR Part 195.555.

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5. At Question 15, Mr. Schramm questions Keystone's corrosion control test leads with respect to the Special Permit. Can you comment on that?

A. Keystone acknowledges the requirement for installation of test leads as noted in the PHMSA special permit. Keystone will use existing TransCanada's procedures for installation of test leads. These specifications will be used in accordance with the latest edition of CGA's Recommended Practice, OCC-1, For the Control of External Corrosion on Buried or Submerged Metallic Piping Systems, NACE International's Recommended Practice, RP0169 (latest edition), Control of External Corrosion on Underground or Submerged Metallic Piping Systems, NACE International's Test Methods, TM01-4-97(latest edition), Measurement Techniques Related to Criteria for Cathodic Protection on Underground or Submerged Metallic Piping Systems, and all applicable federal, state, local and district laws, codes and regulations. Keystone will meet the requirement of US DOT 49 CFR Part 195.567.

6. At Question 16, Mr. Schramm questions Keystone's requirement to examine exposed portions of buried pipe. Can you comment on that?

A. Keystone will use existing TransCanada procedures and applicable industry practices and NACE, API, ASME codes for coating examination and non destructive examination of the pipeline should excavations be required based on in-line inspection data. Non destructive methods for examination of used by TransCanada are industry best practices which include magnetic particle inspection of defects, seams and girth welds in addition to digital mapping of defects to calculate remaining strength of pipe so as to determine the appropriate repair method as required. Keystone will meet the requirement of US DOT 49 CFR Part 195.569.

7. At Question 22, Mr. Schramm questions Keystone's coating for Atmospheric Corrosion per US DOT 195.581. Can you comment on that?

A. Liquid epoxy or FBE coating will be applied to buried piping extending to approximately 18 inches above grade at soil to air interfaces. Then, the liquid epoxy or FBE will be painted over extending down to grade level to prevent damage from damage to the corrosion coating from the sun's ultraviolet rays. Keystone will meet the requirement of US DOT 49 CFR Part 195.581.

8. At Question 23, Mr. Schramm questions Keystone's monitoring for Atmospheric Corrosion Per US DOT 195.583. Can you comment on that?

A. As part of its integrity management program, Keystone will inspect for atmospheric corrosion at least once every three years with intervals not to exceed 39 months as per US DOT 195.583(a) and will repair any coating if required. Keystone will meet the requirement of US DOT 49 CFR Part 195.583.

9. At Question 24, Mr. Schramm questions Keystone's plan to correct corroded pipe under US DOT 195.585. Can you comment on that?

A. As part of its integrity management program, Keystone has an extensive defect assessment and repair methodology. The pipeline will be in-line inspected within the first three years of operations. Any repairs resulting from the engineering analysis of the inspection data will be repaired using industry best practices in accordance with acceptable repair methods within ASME B31.4 and US DOT 49 CFR 195. Keystone will meet the requirement of US DOT 49 CFR Part 195.585.

10. At Question 26, Mr. Schramm questions Keystone's plans with respect to standards under US DOT 195.588. Can you comment on that?

A. Under Keystone's integrity management program, direct assessment could be used to assess the pipeline. Keystone will use the existing TransCanada's direct assessment procedure and follow NACE Standard RP-0502, latest edition along with the requirements of the US DOT 49 CFR Part 195. Keystone will meet the requirement of US DOT 49 CFR Part 195.588.

11. At Question 33, Mr. Miller describes failures involving TransCanada. Can you comment on that?

A. The failures Mr. Miller describes are on natural gas pipelines. These natural gas pipelines are of an older vintage of pipeline which were not constructed using today's more advanced modern construction practices or modern pipeline materials and technologies. Over the past three decades TransCanada has installed thousands of miles of pipelines through out North America of the grade proposed for Keystone and has not experienced a failure. Additional advances in pipeline technology include Fusion Bonded Epoxy external coating, and cathodic protection. These advancements in technologies make comparisons of Keystone to older pipelines invalid. Lastly, crude oil pipelines do not fail in the same manner as natural gas pipelines. Liquid pipelines carry crude oil (as specified in Keystone's Tariff) and do not ignite in an explosion or fire as crude oil is not a compressible fluid.

12. At Question 35, Mr. Miller states Keystone should not be allowed to operate the pipeline using a 0.8 design factor. Can you comment on that?

A. Keystone will meet or exceed safety requirements to operate Keystone using a 0.8 design factor as demonstrated through the extensive evaluation of its application by the US DOT Pipeline Hazardous Materials and Safety Administration in its grant of special permit and conditions to operate at the higher design factor.

13. At Question 35, Mr. Miller states the risk is significantly higher with operating hazardous liquid pipelines than natural gas pipelines with respect to the 0.8 design factor. Can you comment on that?

A. The risk is not significantly higher to operate a liquid pipeline with a 0.8 design factor. There are additional design elements Keystone will use to reduce the risk associated with operating the Keystone pipeline. Key factors mitigating risk to the pipe are:

- Keystone will use a more stringent pipe specification that is required by code for hazardous liquid pipelines.
    - American Petroleum Institute (API) code 5L Keystone will use a Product Specification Level 2 will be used which requires the pipe specification to be engineered with fracture control properties.
    - Keystone will use a more restrictive chemical composition pipe specification leading to improve weldability and minimize construction defects.
- Keystone pipe will use a more stringent specification for pipe fabrication testing.
    - The pipe mill hydrotest will be increased to 95% of specified minimum yield strength (up from 90% per API 5L).

- The pipe will undergo a mandatory ultrasonic inspection in the pipe mill with documented procedures with increased frequency of calibration and sensitivity checks.
- Pipe seams will be selectively inspected upon arrival at construction sites to check for transportation related damage.

- Keystone will use a more stringent specification for pipe construction.
  - The pipe will have 48 inches of ground cover. (minimum requirement by code is 30 inches)
  - The pipe will have a qualification requirement for field weldability testing.
- Keystone will use a more stringent specification for pipe during operation.
  - The pipe will undergo baseline high resolution magnetic flux leakage inspection within three years of commencement of operations.
  - Keystone will operate under a stringent tariff requirement of 0.5% solids and water.
- All Keystone pipe mills were pre qualified to insure quality and compliance with all US codes and regulation.

14. At Question 36, Mr. Miller notes other concerns with the application. Can you comment on this?

A. Welspun Gujarat Stahl Rohren, Ltd (Welspun) is certified by the American Petroleum Institute (API) to produce pipe for installation in the United States and posses ISO certifications. This mill located in Anjar, India has undergone prequalification by a third party (for TransCanada) to ensure it is capable of producing carbon steel line pipe to API 5L Product Specification Level 2 and all other applicable codes and standards for pipe installation in the

United States. As part of the pre qualification process, it was determined that Welspun has produced thousands of miles of pipe that has been installed in the United States and is currently producing more pipe for transportation of hydrocarbons within the United States. Keystone will monitor pipe production at this facility by implementing a quality surveillance program under which inspectors are continuously present at the mill, performing audit functions, during all pipe production shifts. The pipe will be transported to the United States uncoated in accordance with API 5L and API 5LW specifications for land and water transportation. Upon arrival in the US, the pipeline will be inspected for any possible damage and then coated in a prequalified US coating facility. The pipe will be selectively inspected by using a non destructive ultrasonic technique to verify any damage due to transportation.

15. At Question 37, Mr. Miller describes two actual pipeline spills. Can you comment on that?

A. The Alyeska pipeline incident referred to bears little relation to the facts surrounding this application. There are significant differences and factors including the fact that Alyeska is an above ground pipeline, and thus exposed to the criminal acts of a third party. The Keystone pipeline is a buried pipeline, not at risk to the type of incident described. Similarly, the Burnaby pipeline incident referred to bears little relation to the facts of this proceeding as it paralleled a highway. The Keystone pipeline is not paralleling under any highways. However, Keystone recognizes the potential for excavation damage to its pipeline and has taken proactive measures to mitigate the risk such as the depth of cover (four feet), participation in one call programs, implementation of damage prevention programs, and observation of third party excavations, subsequent to line locates near Keystone pipeline right of way.

16. Could you comment on statements made on page 7 through 9 of Mr. Hohn's testimony related to operating pressure?

A. The maximum operating pressure for the Keystone pipeline is 1440psig. Under the United States Department of Transportation regulation 49 CFR Section 195.402, Keystone may operate up to 1584psig in an abnormal operating condition. Such abnormal operating conditions are transient and short term. The special permit granted by PHMSA does not allow the Keystone pipeline to operate at a higher operating pressure. The special permit was requested for and allows for the use of a wall thickness which varies by 0.043" from the current code requirement within the special permit area. The thinner wall thickness does not compromise safety as found by PHMSA and as discussed in other portions of this testimony.

17. Could you comment on statements made on page 18 of Mr. Hohn's testimony related to valves?

A. All isolation valves placed along the Keystone pipeline in South Dakota are remotely controlled valves. Manual valves will be placed with check valves at major waterbodies, which exceeds code requirements.

18. Does this conclude your rebuttal testimony?

A. Yes, it does.

Dated this 21th day of November, 2007.

Meera Kothari, P.Eng.