

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF SOUTH DAKOTA

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

1. **Please state your name and address for the record.**

Answer: Loys A. "Buster" Gray, 9032 N Britt, Kansas City, Missouri.

2. **By whom are you employed?**

Answer: I am employed by Universal Ensco, Inc of Houston, Texas.

3. **What is your position with the Keystone Pipeline Project?**

Answer: I am engineering and Construction Manager for the US portion of the pipeline.

4. **Please state your professional qualifications.**

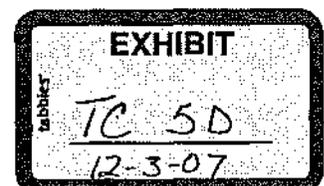
Answer: I have a BS in Civil Engineering, am a licensed professional engineer in 35 states including South Dakota and am entering my 30<sup>th</sup> year of engineering and construction work in the pipeline industry.

5. **Have you provided a resume?**

Answer: Yes, it is attached hereto as Exhibit A.

6. **Are you responsible for portions of the application which Keystone has filed with the South Dakota Public Utilities Commission seeking a siting permit for the Keystone Pipeline?**

Answer: Yes.



**TC 5 - D**

**7. Are you responsible for the information provided in Section 2.2.4, 2.2.5, and 2.2.6 of the application?**

Answer: Yes

**8. Will you please summarize the information in that part of the application?**

Answer: Section 2.2.4 addresses the land requirements for construction of the pipeline and pump stations, and for support sites like contractor yards and pipe yards. This section includes a typical detail of the proposed 110' construction right of way.

Section 2.2.5 describes the anticipated number of pipeline contractors and the "assembly line" of construction crews that are utilized in pipeline construction. Also, Keystone's Construction Mitigation and Reclamation Plan (CMR Plan) is described. This document addresses construction mitigation and reclamation in all types of lands including uplands, wetlands, and water bodies. Uplands include agricultural, grass, pasture, and forested lands as well as lands for residences and businesses.

Section 2.2.6 describes the special construction procedures which Keystone will use where the specific site conditions warrant or require them. These site-specific techniques include construction at road, highway, and railroad crossings; waterbody crossings; and construction measures to minimize impacts to grazing and livestock movement.

**9. Are you responsible for the information provided in Section 5.4.1 of the application?**

Answer: Yes

**10. Will you please summarize the information in that part of the application?**

Answer: This section addresses surface water drainage and summarizes the waterbody crossing methods that will be implemented during construction of the pipeline. These methods

include wet open cut, dry open cut, and horizontal directional drill crossings. Each of these crossing methods include techniques to minimize environmental impacts to waterbodies.

Permitting of waterbody crossings, which is currently underway, will ultimately determine the construction method to be utilized., Keystone presently anticipates that most waterbodies in South Dakota will be open cut. However, the Missouri River at Yankton will be crossed utilizing horizontal directional drilling.

**11. Are you responsible for the information provided in Section 5.4.3 of the application?**

Answer: Yes

**12. Will you please summarize the information in that part of the application?**

Answer: This section addresses water use and sources and summarizes the uses of water during construction of the pipeline. The only significant water use is hydrostatic testing of the pipeline where the pipeline, once completed, is filled with water and tested to 125% of its maximum operating pressure. Water is sourced from water body crossings and returned to those waterbody-crossing watersheds. Since the pipeline is cleaned prior to introduction of the water, the water from the pipeline after testing is not contaminated. The discharge water quality is monitored and samples taken and tested during discharge.

**13. Are you responsible for the information provided in Section 5.4.4 of the application?**

Answer: Yes

**14. Will you please summarize the information in that part of the application?**

Answer: This section describes the use, prevention, countermeasures, and containment of spills of fluids such as diesel, gasoline, water coolants, and hydraulic fluid from construction equipment during construction of the pipeline.

**15. Are you responsible for the information provided in Section 5.7.4 of the application?**

Answer: Yes

**16. Will you please summarize the information in that part of the application?**

Answer: This section addresses local land use and controls and summarizes the types of local permits that must be acquired for construction of the pump station facilities.

**17. Are you responsible for the information provided in Section 5.10 of the application?**

Answer: Yes

**18. Will you please summarize the information in that part of the application?**

Answer: This section addresses solid wastes and summarizes the types of solid wastes and how they are handled and disposed of during construction of the pipeline.

**19. Are you responsible for the information provided in Section 6.1.1 of the application?**

Answer: Yes

**20. Will you please summarize the information in that part of the application?**

Answer: This section is on construction labor, local labor needs and benefits, and local labor resources and summarizes the estimated numbers and types of labor necessary for construction of the pipeline. It also addresses that large diameter cross country pipeline construction is performed by specialty contractors utilizing organized labor.

**21. Are you responsible for the information provided in Section 6.1.2 of the application?**

Answer: Yes. This section addresses mitigation of impacts to agriculture, crop land, grassland, rangeland, and irrigated land.

**22. Are you responsible for the information provided in Section 6.1.3 of the application?**

Answer: Yes

**23. Will you please summarize the information in that part of the application?**

Answer: This section addresses impacts to the local commercial and industrial sectors and summarizes the types of economic benefits from increased payroll taxes and non-resident expenditures to the commercial sector during construction of the pipeline.

**24. Are you responsible for the information provided in Section 6.1.4 of the application?**

Answer: Yes

**25. Will you please summarize the information in that part of the application?**

Answer: This section addresses land values and summarizes the compensation to landowners for easements and crop damages, the impacts to land use during construction of the pipeline, and the restrictions on land use on the 50' permanent easement during operations of the pipeline.

**26. Are you responsible for the information provided in Section 6.2.1 of the application and Data Request 2-1(a)?**

Answer: Yes.

**27. Will you please summarize that information?**

Answer: That material addresses housing and summarizes the types of housing and locations non-resident construction workers will utilize during construction of the pipeline.

**28. Are you responsible for the information provided in Section 6.2.2 of the application and Data Request 2-1(l)?**

Answer: Yes.

**29. Will you please summarize that information?**

Answer: This section addresses energy and summarizes where electricity will be sourced for the pump stations and related facilities, the responsibility for new electric transmission power lines, and the temporary, short term electricity requirements during construction of the pipeline.

**30. Are you responsible for the information provided in Section 6.2.3 of the application and Data Requests 2-1 (c) and (d)?**

Answer: Yes.

**31. Will you please summarize that information?**

Answer: This section addresses sewer and water and summarizes the impacts of the influx of construction workers during construction of the pipeline. Keystone does not anticipate that there will be significant effects on these resources during construction.

**32. Are you responsible for the information provided in Section 6.2.4 of the application and Data Request 2-1 (e)?**

Answer: Yes.

**33. Will you please summarize that information?**

Answer: This section addresses solid waste management and summarizes the impacts of increased solid wastes on existing solid waste management facilities during construction of the

pipeline. There will be no solid waste generated of any unusual nature. The solid waste disposal sites along the route are capable of handling the solid waste which will result from construction.

**34. Are you responsible for the information provided in Section 6.2.5 of the application and Data Request 2-1(g)?**

Answer: Yes.

**35. Will you please summarize that information**

Answer: This section addresses transportation and summarizes the types of permits necessary for the construction and impacts to local roads during construction of the pipeline. Keystone will obtain all necessary permits. Keystone will bore all improved road crossings and will open cut only those road crossings which are unimproved.

**36. Are you responsible for the information provided in Section 6.3.1 of the application and the response to Data Request 2-1(i)?**

Answer: Yes.

**37. Will you please summarize that information?**

Answer: This section addresses health services and summarizes the impacts of the influx of non-resident construction workers during construction of the pipeline. Keystone will rely on the health service providers in the area, but does not expect to require services above and beyond that which is ordinarily offered.

**38. Are you responsible for the information provided in Section 6.3.2 of the application and Data Request 2-1(b)?**

Answer: Yes

**39. Will you please summarize that information?**

Answer: This section addresses schools and summarizes the impacts of the influx of non-resident construction workers during construction of the pipeline. Keystone anticipates that very few workers will bring their families along for the construction and that any schools along the route will be able to accommodate them.

**40. Are you responsible for the information provided in Section 6.3.3 of the application and Data Request 2-1(j)?**

Answer: Yes

**41. Will you please summarize that information?**

Answer: This section addresses recreation and summarizes the impacts of the influx of non-resident construction workers during construction of the pipeline. Some temporary workers will buy licenses and engage in hunting and fishing during the construction period. Long work days and work weeks will curtail impacts to local recreation facilities.

**42. Are you responsible for the information provided in Section 6.3.4 of the application and Data Request 2-1(f)?**

Answer: Yes

**43. Will you please summarize that information?**

Answer: This section addresses public safety (law enforcement) and summarizes the impacts of the influx of non-resident construction workers during construction of the pipeline.

**44. Are you responsible for the information provided in Section 6.4.1 of the application?**

Answer: Yes

**45. Will you please summarize the information in that part of the application?**

Answer: This section addresses population and demographics and summarizes the impacts of the influx of non-resident construction workers during construction of the pipeline.

**46. Are you responsible for the response to Data Request 2-1 (h)?**

Answer: Yes I am.

**47. Will you please summarize the information?**

Answer: This section addresses fire protection during construction. Keystone contractors will provide fire protection equipment to prevent fires and to control fires in the event one should occur.

**48. Are you responsible for the information provided in Tables 2, 6,7, 8, 9 and 10 of the application?**

Answer: Yes

**49. Will you please summarize the information in that part of the application?**

Answer: These sections are on water use and sources and summarize the uses of water during construction of the pipeline.

**50. Are you responsible for the information provided in Exhibit 2 of the application?**

Answer: Yes

**51. Will you please summarize the information in that part of the application?**

Answer: This exhibit depicts the pipeline route, the location of pipeline pump stations and mainline valves and location of construction spreads.

**52. Are you responsible for the information provided in Exhibit 5 of the application?**

Answer: Yes

**53. Will you please summarize the information in that part of the application?**

Answer: This exhibit depicts the typical 110' construction right of way.

**54. Are you responsible for the information provided in Exhibit A of the application?**

Answer: I am responsible for the route maps in Exhibit A.

**55. Will you please summarize the information in that part of the application?**

Answer: The route maps depict the location of the pipeline through South Dakota.

**56. Are you responsible for the information provided in Exhibit B of the application?**

Answer: Yes

**57. Will you please summarize the information in that part of the application?**

Answer: This exhibit includes the Construction Mitigation and Reclamation Plan. This document addresses construction mitigation and reclamation in all types of lands including uplands, wetlands, and water bodies. Uplands include agricultural, grass, pasture, and forested lands, as well as lands for residences and businesses.

**58. Could you please briefly describe the Construction Mitigation and Reclamation Plan?**

Answer: The CMR Plan was filed as an Exhibit to Keystone's application. The CMR Plan provides a broad range of mitigation and reclamation requirements for all types of land including agriculture lands, but also forested, pasture, grassland, residential, and commercial lands/areas. The plan also addresses many other types of construction impact mitigation, such as noise control, dust control, fire prevention, weed management, etc.

**59. Does Keystone seek or have agreements with counties and townships concerning the damage to roads caused by the pipeline construction?**

Answer: Keystone will acquire permits authorizing the crossing of county and township roads. These permits may allow bored crossings or, in some cases, open cut crossings. The permits typically require Keystone to restore the roads to their pre-construction condition. Keystone is just now starting the process of permitting the crossings of County and Township roads. In the process of permitting road crossings, many local jurisdictions will request some type of agreement to ensure that any roads damaged during construction are repaired to pre-construction condition. In summary, it is Keystone's policy that if its construction equipment causes damage to county or township roads, Keystone will be responsible for the repair of those roads to pre-construction condition. Keystone understands that the Commission will fix the terms of a bond for such construction and has engaged the Association of Towns and Townships in a discussion about that amount.

**60. Do you adopt the portions of Keystone's application discussed above as your testimony in this proceeding as well as the additional testimony above and the attached exhibits?**

Answer: Yes, I do.

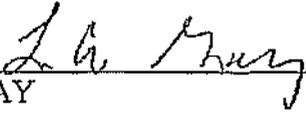
**61. Do the portions of the application for which you are responsible support the granting of a permit by the Commission for the Keystone Pipeline Project?**

Answer: Yes they do.

**62. Does this conclude your testimony?**

Answer: Yes, it does.

Dated this 21<sup>st</sup> day of September, 2007.

  
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L. A. GRAY

# L. A. "BUSTER" GRAY, P.E.

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## Experience Summary:

Over thirty years of experience in the management and design of oil and gas pipeline projects with capital budgets from less than \$1 million to approximately \$5 billion. Experienced in all aspects of pipeline project execution including feasibility and flow studies, route selection, surveying, mapping, detailed engineering design, DOT compliance, material procurement, project and construction management, commissioning, and operations. Projects managed have included a variety of pipeline related facilities including production, separation, dehydration, compression, gas treatment and metering equipment. Owned and operated Pipeline Design Enterprises, Inc. which was merged into Universal Ensco, Inc. in 1989. Senior Vice President of Universal Ensco, Inc.

## Career highlights include:

- *Engineering & Construction Manager* of the 1,280 mile 30" & 36" U.S. portion crude oil pipeline project across North & South Dakota, Nebraska, Kansas, Missouri, Oklahoma, and Illinois. The project involves twelve (12) mainline construction spreads with installation scheduled over a two year period to begin in 2008.
- *Project Director* of the conceptual design, constructability assessment, and cost estimate for Exxon's proposed 900 kilometer 36" Sakhalin Island to China natural gas pipeline project. The pipeline route traverses the remoter area of the Khabarovsk Krai in Far Eastern Russia.
- *Project Director* for the supervision of construction of an approximate 4,000 kilometers (2,500 miles) of 40" OD gas pipeline and related facilities (China West to East Gas Pipeline Project) for PetroChina Company Limited. The pipeline route traversed rugged, mountainous areas as well as desert terrain.
- *Project Director* responsible for the preparation of a cost estimate for construction of the Guangdong LNG Pipeline Project including assessment of the proposed pipeline route for constructability issues and relative complexity to the China West to East Gas Pipeline Project.
- *Project Director* of the Conceptual Design and Cost Estimate for construction of an approximate 4,000 kilometers (2,500 miles) of 40" OD gas pipeline (China West to East Gas Pipeline Project) and related facilities for PetroChina Company Limited – Phase I.
- *Engineering & Construction Manager* of the 900-mile 36" U.S. portion of the Alliance 36" natural gas pipeline project across North Dakota, Minnesota, Iowa, and Illinois. The project involved seven (7) mainline construction spreads with installation scheduled over a two year period beginning in 1999.
- *Project Director* of the 515 mile U.S. portion of the 780-mile 24" crude oil Express Pipeline Project from Wildhorse, Montana to Casper, Wyoming. This project was routed, designed, materials procured and installed in less than one year. The project included management of route selection, survey, engineering design, drafting, procurement, and construction.

- **Engineering Manager** of the design of the 223-mile 20" Tuscarora natural gas pipeline project to serve Reno, Nevada and several small northern California communities. The project included survey, design, and drafting of the pipeline, pigging, measurement, and pressure reduction facilities. The pipeline route traverses rugged, mountainous as well as desert terrain.
- **Project Director** for the route selection, survey, permitting, right-of-way acquisition, and mapping for Tennessee Gas Pipeline Company's 223-mile, 30-inch natural gas pipeline in Louisiana and Mississippi.
- **Project Director** for Seagull Energy Corporation's Multiple Feedstocks Products Pipeline Project. This project, located in the congested Houston Ship Channel area, included the survey, mapping, detailed design, material procurement assistance, and construction inspection for three 8-inch and one 10-inch products pipelines.
- **Project Manager** of natural gas pipelines and related facilities to electric generation utilities including a 23-mile 20" line for Florida Power and Light Company in Florida, a 75-mile 20" line for Cincinnati Gas and Electric Company in eastern Kentucky, and an 11-mile 20" line for Kentucky Utilities in central Kentucky. Responsibilities included route selection, survey, permitting, design, right-of-way acquisition, and construction supervision.
- **Project Manager** for other large diameter pipeline projects including 67-miles of 30-inch and 51-miles of 24-inch natural gas pipelines in the Houston metropolitan area; 3-miles of dual 30-inch gas pipeline and measurement facilities near Hallettsville, Texas, and 11-miles of 24-inch pipeline in the highly congested Houston Ship Channel area.
- **Expert Witness** for regulatory hearings and trial on matters including pipeline flow capacities, cost estimates, construction cost claims, and design safety standards.

#### **Education:**

Bachelor of Science, Civil Engineering, Mississippi State University, 1976

#### **Registrations and Professional Memberships:**

- Professional Engineer, TX, No. 49686; MS, No. 9160; LA, No. 23381; AR, No. 7489; NM, No. 11337; OK, No. 15758; AL, No. 18138; CO, No. 27545; FL, No. 0044425; MT, No. 10706PE; WY, No. 6233; GA, No. 19882; SC, No. 14965; NC, No. 18638; KY, No. 17430; PA, No. PE-043436-R; MO, No. EN-025579; NV, No. 10193; NY, No. 071750; VA, No. 0402025505; MD, No. 20940; NJ, No. 38813; IL, No. 062-050390; MN, No. 24602; IA, No. 13775; KS, No. 14521; MI, No. 43431; WA, No. 34539; WI, 33582-006; OH, No. E-66360; AZ 37034; ND 4714; NE E-11956 and OR 79341PE.
- Professional Land Surveyor, Texas, No. 4257
- American Society of Civil Engineers
- Pipeliners Club of Houston (Former President)