

**STATE OF NORTH DAKOTA  
PUBLIC SERVICE COMMISSION**

**TRANSCANADA KEYSTONE PIPELINE, LP**

**CASE No. PU-06-421**

**30-INCH CRUDE OIL PIPELINE/CAVALIER TO SARGENT COUNTIES**

**SITING APPLICATION**

**OAH CASE No. 20070181**

**TESTIMONY OF L.A. GRAY  
IN SUPPORT OF APPLICATIONS  
FOR A CORRIDOR CERTIFICATE AND ROUTE PERMIT**

L. A. GRAY, BEING FIRST DULY SWORN, ON OATH, DEPOSES AND STATES AS FOLLOWS:

1. My name is L.A. Gray. I am Senior Vice President of Universal Ensco Inc. I am Engineering and Construction Manager for the TransCanada Keystone Pipeline, L.P. (Keystone) project.
2. I am filing this testimony on behalf of Keystone, in support of its applications for a Certificate of Corridor Compatibility and a Route Permit for the proposed Keystone project.
3. I am attaching a copy of my resume and professional qualifications.
4. On April 10, 2007, Keystone filed an application for a Certificate of Corridor Compatibility and an application for a Route Permit, pursuant to the North Dakota Energy Conversion and Transmission Facility Siting Act, North Dakota Century Code, Chapter 49-22.
5. By its applications, Keystone seeks authorization to site and construct a 30-inch crude oil pipeline and appurtenant facilities, which will deliver crude oil from an oil supply hub near Hardisty, Alberta, Canada to Wood River and Patoka, Illinois and Cushing Oklahoma.

6. The pipeline will enter North Dakota at the North Dakota/Canada border in Cavalier County and will extend in a southerly direction, exiting the State at the South Dakota border in Sargent County. The length of the pipeline in North Dakota will be approximately 218 miles.
7. Keystone's applications address the elements required by the North Dakota Century Code. The Corridor Certificate application is organized pursuant to the North Dakota Public Service Commission's (Commission) "Application Guidelines for a Certificate of Corridor Compatibility".
8. I am responsible for the following portions of Keystone's application for a Certificate of Corridor Compatibility:
  - a. Section D.2.c.i. Selection Criteria; Impact on Agriculture. This section addresses the impact of the project, including mitigation measures, with respect to agriculture. Specifically, this section addresses agricultural production; family farms and ranches; land which may have soil, topography, drainage, and an available water supply that cause the land to be economically suitable for irrigation; and surface drainage patterns (including surface drainage, waterbody crossings, hydrostatic test water withdrawal and discharge, and spill prevention).
  - b. Section D.2.d.i. – Location and Design - . I am responsible for the portion of this section at page 38 of the application regarding Keystone's Construction Mitigation and Reclamation Plan (CMR Plan).
  - c. Section D.2.d.ii – Training and Utilization of Available Labor in North Dakota for the Generalized and Specialized Skills Required.
  - d. Section D.2.d.vi – Labor Relations. This section addresses the use of union labor to construct the pipeline.

- e. Section D.2.d.vii – Coordination of Facilities. This section addresses crossing of existing utilities and infrastructure and coordination with electric power providers.
  - f. Section D.3. Mitigative Measures. This section incorporates the discussion of Keystone's CMR Plan.
9. I am responsible for the following portions of Keystone's Application for a Route Permit:
- a. Section B.2 – The Effects of New Energy Conversion and Transmission Technologies and Systems Designed to Minimize Adverse Environmental Effects. I am responsible for the portion of this section that addresses the CMR Plan.
  - b. Section B.8. – Existing Plans of the State, Local Government, and Private Entities for other Developments at or in the Vicinity of the Proposed Site, Corridor, or Route. This section addresses the routing of the Keystone project to avoid developments in the vicinity of the project.

Dated this 19<sup>th</sup> day of July, 2007.

L.A. Gray  
L.A. Gray

County of CLAY )

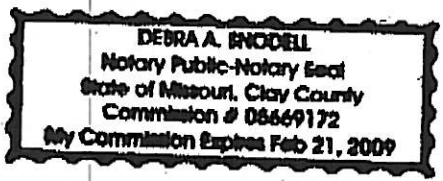
) ss.

State of MISSOURI )

On the 19<sup>th</sup> day of July, 2007, before me personally appeared L.A. Gray, known to me to be the same person described in and who executed the within and foregoing instrument and acknowledged to me that he executed the same.

Debra A. Snodell  
Notary Public, State of MISSOURI

(SEAL)



# 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.

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co, Inc.

- **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)