BEFORE THE SOUTH DAKOTA PUBLIC UTILITIES COMMISSION

DOCKET NO. HP14-002

IN THE MATTER OF THE APPLICATION OF DAKOTA ACCESS, LLC FOR AN ENERGY FACILITY PERMIT TO CONSTRUCT THE DAKOTA ACCESS PIPELINE

Direct Testimony of Robert E. McFadden, P.E.
On Behalf of the Staff of the South Dakota Public Utilities Commission
July 6, 2015

Q: Please state your name and business address.

A: Robert Earle McFadden
5729 B Logan Lane, Houston, Texas 77007

Q: Describe your educational background.

A: I hold a Bachelor of Science in Civil Engineering from Louisiana Tech University

Q: By whom are you now employed?

A: I am employed by REM Pipeline Consultants, LLC.
I am President and majority owner of REM Pipeline Consultants, a pipeline engineering consulting firm which offers consulting services to midstream and oil and gas companies, investors, legal firms and governmental agencies on a wide variety of pipeline, pipeline facility and gas processing design and operational issues.

Q: What work experience have you had that is relevant to your involvement on this project?

A: I have over 40 years of experience in the pipeline industry in positions ranging from pipeline survey to engineering design, project management and supervision of transmission pipelines, gathering pipelines, pump stations, compressor stations, measurement, dehydration and treating facilities and virtually all aspects of pipelines, both onshore and offshore as well as domestic and foreign installations. As such, I am very familiar with the requirements of title 49 CFR Part 195 - Transportation of Hazardous Liquids by Pipeline and Part 194 – Response Plans for Onshore Oil Pipelines, which form the basis of the safe design and operation of Hazardous Liquids Pipelines in the US.

Q: What Professional Credentials do you hold?

A: I am a Licensed Professional Engineer in the State of Texas - License Number 99488

Q: What is the purpose of your testimony?

A: My testimony is to state my opinions developed from my review of relevant portions of the application filed by Dakota Access, LLC with the South Dakota Public Utilities Commission related to the proposed Dakota Access Pipeline Project Energy Transmission Facility: SDCL 49-41B, together with related Docket filings. I was requested to develop opinions as to whether or not the proposed facilities will meet the design, construction, testing, operation and other requirements of Federal Pipeline Safety Regulations (49 CFR 195 – all subparts) and other applicable federal and state regulations. The testimony includes

specific discussion of areas of required notification and approvals from the Pipeline and Hazardous Materials Safety Administration (PHMSA). Specific areas of concern will be addressed in the testimony that follows.

Q: What methodology did you employ?

A: Methodology used in developing my testimony includes a review of the permit application, Dakota Access Pipeline Project Energy Transmission Facility: SDCL 49-41B, Exhibits, responses to Interrogatories, and other documents included in Dakota Access, LLC Docket No HP 14-002. In addition I reviewed applicable areas of 49 CFR Part 195-Transportation of Hazardous Liquids by Pipeline, 49 CFR Part 194-Response Plans for Onshore Oil Pipelines, Part 190 – Pipeline Safety Programs and Rulemaking Procedures, Part 199 – Drug and Alcohol Testing, the National Pipeline Mapping System and PHMSA regulations.

Q: On whose behalf was this testimony prepared?

A: This testimony was prepared on behalf of the Staff of the South Dakota Public Utilities Commission.

Q: Is an oil pipeline such as the proposed Dakota Access Pipeline considered a Hazardous Liquids Pipeline?

A: Yes, the proposed Dakota Access Pipeline is considered to be a Hazardous Liquids pipeline and thus is subject to 49 CFR Part 195-Transportation of Hazardous Liquids by Pipeline

Q: What is the PHMSA permitting approval process for an oil pipeline in interstate commerce?

A: PHMSA is the agency that enforces the Pipeline Safety Regulations for the US Department of Transportation as defined in the Title 49 Subchapter D – Pipeline Safety, Parts 190 thru 199.Procedures used by PHMSA in carrying out its duties regarding pipeline safety laws are prescribed in Part 190 – Pipeline Safety Programs and Rulemaking Procedures.
Except for Part 194 – Response Plans for Onshore Oil Pipelines, PHMSA regulations do not require an operator to notify, apply for a permit or get approval from PHMSA for the construction or operation of a hazardous liquids pipeline. PHMSA receives copies of all Federal Energy Regulatory Commission (FERC) pipeline applications. FERC regulates the Interstate Transmission of Natural Gas, Electricity and Oil. PHMSA participates in FERC scoping meetings at their discretion and at the request of FERC. As such PHMSA monitors the design, construction and operations of interstate oil pipelines.

Q: What documents must be produced by the Applicant?

A: There are a number of plans and documents that are required to be developed by the pipeline operator by PHMSA regulations.
Specific plans and programs required under Part 195 – Transportation of Hazardous Liquids by Pipeline (Part 195) are as follows:

- Operating and Maintenance Procedures Manual which must contain emergency procedures
- Integrity Management Program
- Damage Prevention Program
- Continuing Public Education Program (also referred to as a Public Awareness Plan)
- Operator Qualification Program

Other PHMSA jurisdictional regulations also require written programs as indicated below:

- Part 194 – Response Plans for Onshore Oil Pipelines (Part 194) this plan will detail the requirements for the operators Oil Spill Response Plan.
- Part 199 – Drug and Alcohol Testing (Part 199) This section covers drug and alcohol testing of certain pipeline employees to be performed in accordance with:
  - Anti-drug plan
  - Alcohol Misuse Plan
- National Pipeline Mapping System- Section 15 of the Pipeline Safety Improvement Act of 2002 requires pipeline operators to submit geospatial and other data to the National Pipeline Mapping System (NPMS).

Q: **What documents produced by the Operator must be approved by PHMSA?**

A: As previously stated, plans, programs and specific documents are not approved by PHMSA. However, the PHMSA inspection process reviews the documents for adequacy during compliance audits. They note deficiencies and require the Operator to address such deficiencies.
Of the plans, programs and documents listed above, only the Oil Spill Response Plan requires specific approval from PHMSA.

Q: What are the federal requirements for the Oil Spill Response Plan approval?

A: PHMSA requires that two copies of the Oil Spill Response Plan be submitted to the Office of Pipeline Safety (OPS). PHMSA will review and approve the plan if it meets all of the requirements of Part 194 – Response Plans for Onshore Oil Pipelines. If PHMSA determines that the plan does not meet all of the requirements, PHMSA will notify the operator of any alleged deficiencies and will allow the operator to respond, including the opportunity for an informal conference on any proposed plan revisions and the opportunity to correct deficiencies. There is also an appeals process that the operator may initiate in the event that the operator does not agree with PHMSA's interpretation.

Part 194 requires that an operator of a pipeline for which a response plan is required, may not handle, store, or transport oil in that pipeline unless the operator has submitted a response plan meeting the requirements. Once the response plan is submitted to OPS, the operator may continue to operate the pipeline for up to two (2) years, pending approval or disapproval of the plan, provided that the operator has submitted a certification to OPS that the operator has obtained, through contract or other approved means, the necessary personnel and equipment to respond to the maximum extent practicable, to a worst case discharge or a substantial threat of such discharge. The certificate must be signed by the qualified individual or an appropriate corporate officer.

Q: Where is the Dakota Access Pipeline in this process?

A: The Operator states in interrogatories that they are in the process of developing the Oil Spill Response Plan for the Dakota Access Pipeline. PHMSA regulations require that the plan be submitted before the pipeline and related facilities are operated.

Q: What is PHMSA's inspection role during construction of the pipeline?

A: PHMSA inspections that take place during construction are to ensure that the pipeline is being built in compliance with the requirements of Part 195. PHMSA does not serve as the operator's quality control inspectors.
Based on the construction schedule submitted by the operator in the FERC application, PHMSA will notify the operator in advance of construction commencement of their plan to inspect certain activities and request a current construction schedule. The operator will be notified which phases of construction that PHMSA wishes to inspect and when it plans to do so. In addition to specific construction requirements of Part 195, PHMSA's inspections will verify that activities in the field follow the operator's specific written construction specifications and standards. Field visits will focus on areas where PHMSA has encountered problems with other pipeline construction in the past, such as the proper execution of welding procedures, pipe handling, lowering in and tie-ins.

Q: What is PHMSA's inspection role after construction?

A: After the pipeline has been placed into service, PHMSA's primary inspection role is to ensure that the operator is operating the pipeline in accordance with the operator's pipeline specific procedures, plans and programs, and in compliance with specific regulatory requirements. These include operating, maintenance and corrosion control procedures and integrity management activities. A primary focus will be on verification that tests, inspections, patrols, surveys and other routine actions are being performed within the stipulated time frames and in accordance with the operator's procedures. Ensuring that the individuals performing such tasks are qualified and subject to a compliant drug and alcohol program in accordance with Part 199 is an integral part of those inspections.

Q: What is PHMSA's role in decommissioning the pipeline?

A: Decommissioning is not a PHMSA regulated activity. However, if a pipeline is abandoned (i.e. permanently removed from service) operating and maintenance regulations must still be followed and are subject to PHMSA inspection. This usually occurs as a part of a regular compliance audit. PHMSA does require that the operator file a report of the abandonment with the NPMS.

Q: Are there parts of the operator's application that PHMSA does not review?

A: PHMSA does not review parts of the application that are not directly related to the design, construction and maintenance of the pipeline. These include such parts of the applications routing, necessity of the facilities and environmental impacts of construction.

Q: Does PHMSA have authority to grant special permits that waive compliance with one or more of the Federal pipeline safety regulations under Part 195?

A: Yes, PHMSA can grant waivers of compliance with certain regulations under Part 195, such as the maximum hoop stress percentage of Specified Minimum Yield Strength (SMYS) that a pipeline can be operated at in Class 1 areas being increased from 0.72% SMYS to 0.80% SMYS. Such Special Permits generally include additional requirements for testing and other restrictions and conditions.

Q: Has the Dakota Access Pipeline requested a special permit as described above?

A: No, Dakota Access Pipeline has not requested a Special Permit.

Q: Is the Dakota Access Pipeline following all PHMSA procedural requirements?

A: It appears that thus far, the Dakota Access Pipeline is following all PHMSA procedural requirements.

Q: What are HCA'S?

A: HCA's are High Consequence Areas. These are defined as

1. A commercially navigable waterway.
2. A high population area, which means an urbanized area delineated by the Census Bureau as having a population of 50,000 or more people or a population density of 1000 people per square mile.
3. Other populated area with a concentrated population such as an unincorporated town or designated commercial area.
4. An unusually sensitive area (USA), defined as a drinking water or ecological resource area that is unusually sensitive to environmental

damage from a hazardous liquids pipeline such as a community water intake, a source water protection area for aquifers, a wellhead protection area, an ecological resource, a migratory bird concentration area, an area containing endangered or imperiled species, as defined in Part 195 section 195.6.

Q: Does the Dakota Access Pipeline pass through any HCA's in South Dakota

A: According to Dakota Access Pipeline, the pipeline route does not pass through any HCA's in South Dakota. A preliminary review of the alignment maps furnished with the permit application does not indicate that the pipeline route passes through any HCA's.
Dakota Access Pipeline also states in their interrogatories that there are no USA's within the pipeline route. Additional study needs to be done to confirm this. I reserve the right to amend my testimony should additional information confirm that the pipeline route does pass through any USA's.

Q: Are main line block valves planned to be installed at the proper locations?

A: Part 195 requires that block valves be installed at each of the following locations:

1. On the suction end and discharge end of a pump station in a manner that permits isolation of the pump station equipment in the event of an emergency.
2. On each line entering or leaving a breakout storage tank area in a manner that permits isolation of the tank from other facilities.
3. On a mainline at locations along the pipeline system that will minimize damage or pollution from accidental hazardous liquid discharge, as appropriate for the terrain in open country, or for populated areas.
4. On each lateral takeoff from a trunk line.
5. On each side of a water crossing that is more than 100 feet wide from high-water mark to high-water mark unless the Administrator finds in a particular case that the valves are not justified.
6. On each side of a reservoir holding water for human consumption.

Dakota Access Pipeline maps provided with the original permit submission indicates that valves are planned for the locations as prescribed above. There are a total of 31 main line block valves which are in addition to valves at the single pump station and at the launcher/receiver locations. Main line block valves appear to be properly spaced. Additional information is needed on the width of several of the streams to confirm that additional main line block valves are not required at these locations. I reserve the right to amend my testimony if subsequent information is obtained that indicates that additional valves are required.

Q: Does Part 195 require that the pipeline be protected from external and internal corrosion?

A: Yes, it does. The pipeline is designed with an external corrosion coating of fusion bonded epoxy, 14-16 mils in thickness, which is an accepted industry standard for external corrosion protection on a pipeline. In addition, an impressed current will be designed to protect the pipeline. Internal corrosion will be controlled by limiting the water and sediment content of oil shipped through the pipeline. The applicant has stated that the design of the cathodic protection system will comply with Part 195 Subpart H and the National Association of Corrosion Engineers Recommended Practice 0169

Q: What provisions will be made for detecting leaks on the pipeline?

A: In addition to planned continuous monitoring of flows and pressures by Supervisory Control and Data Acquisition (SCADA) system to be installed with the pipeline, the applicant has committed to installation of a “state of the art” Computational Pipeline Monitoring software system, which will continuously monitor the pipeline for leaks.

Q. Does this conclude your testimony?

A: Yes.