

PUBLIC SERVICE COMMISSION

STATE OF NORTH DAKOTA

**Dakota Gasification Company
CO₂ Pipeline Siting Application**

CASE NO. PU-07-184

FINDINGS OF FACT, CONCLUSION OF LAW, AND ORDER

June 27, 2007

Appearances

Commissioners Susan E. Wefald, Tony Clark, and Kevin Cramer.

Mark D. Foss, Dakota Gasification Company, 1600 East Interstate Avenue, Bismarck, North Dakota 58503, on behalf of Dakota Gasification Company.

Annette Bendish, Public Utility Analyst, Public Service Commission, 600 East Boulevard Avenue, Bismarck, North Dakota 58505-0480, on behalf of the Public Service Commission.

William W. Binek, Commission Counsel, Public Service Commission, 600 East Boulevard Avenue, Bismarck, North Dakota 58505-0480, as the Hearing Officer.

Preliminary Statement

On May 11, 2007, Dakota Gasification Company (DGC) filed an application for a route permit authorizing construction of approximately 11,400 feet of 14-inch pipeline to transport CO₂ produced at the Great Plains Synfuels Plant to the oil-producing areas in southeastern Saskatchewan. The proposed construction will be across Lake Sakakawea from McKenzie County to Williams County, North Dakota and will replace the existing pipeline.

On May 16, 2007, the Commission deemed the application complete and issued a Notice of Filing and Notice of Hearing.

The Notice of Hearing identified the following issues:

1. Will the location, construction and operation of the proposed pipeline produce minimal adverse effects on the environment, natural resources and upon the welfare of the citizens of North Dakota?

2. Is the proposed pipeline compatible with the environmental preservation and the efficient use of resources?
3. Will the proposed pipeline corridor minimize adverse human and environmental impact while ensuring continuing system reliability and integrity and ensuring that energy needs are met and fulfilled in an orderly and timely fashion?
4. Is it appropriate for the Commission to waive any procedures and time schedules as requested in the application?

The Commission held a public hearing on Tuesday, June 12, 2007 at 11:00 a.m. (CDT) at the Watford City Hall, 213 2nd Street, Watford City, North Dakota.

DGC supplemented the record with late filed exhibits responding to questions raised by the Commission at the hearing.

Having allowed all interested persons an opportunity to be heard and having heard, reviewed and considered all testimony and evidence presented, the Commission makes the following:

Findings of Fact

1. Dakota Gasification Company is a wholly owned subsidiary of Basin Electric Power Cooperative. DGC, a North Dakota corporation, owns and operates the Great Plains Synfuels Plant, which is located near Beulah, North Dakota.
2. The synfuels plant is a coal gasification plant that uses a Lurgi coal gasification process to gasify lignite coal into gases and liquids. The plant consumes approximately 17,000 tons of lignite per day. When production is dedicated to synthetic gas production, the plant produces approximately 160 million standard cubic feet per day (mmscf/d) of synthetic natural gas. As byproducts, the plant produces a combination of krypton/xenon gas, liquid nitrogen, cresylic acid, phenol, ammonium sulfate and carbon dioxide. As a co-product, the plant is capable of producing up to 1,200 tons of anhydrous ammonia per day.
3. DGC witness Robert Weir, project manager for DGC, testified that carbon dioxide is recovered at the synfuels plant using a Rectisol process that captures carbon dioxide with a purity of 95%. The carbon dioxide is compressed using three identical MAN Turbo AG compressors in parallel. These 19,500 horsepower compressors increase the carbon dioxide pressure from about 7 pounds per square inch gauge (psig) to nearly 2,700 psig. Each compressor has a flow capability of 57 mmscf/d. The synfuels plant currently captures approximately 49% of the carbon dioxide it previously emitted to the atmosphere.

4. DGC sells the compressed carbon dioxide to two companies in Saskatchewan: EnCana Oil & Gas Partnership and Apache Canada, Ltd., which use this carbon dioxide for enhanced oil recovery (EOR) at their Weyburn oil field and Midale oil field, respectively.

5. DGC owns and operates a pipeline that delivers the compressed carbon dioxide from the Great Plains Synfuels Plant to the U.S./Canadian border where the pipeline interconnects with the Souris Valley Pipeline. The Souris Valley Pipeline is a pipeline owned by Souris Valley Pipeline Limited, a company organized under the laws of Canada and a wholly owned subsidiary of DGC. The Souris Valley Pipeline is operated by DGC.

6. Weir stated the pipelines traverse approximately 167 miles in North Dakota and extend 38 miles in Saskatchewan, Canada, for a total length of 205 miles. Compressor stations at the Synfuels Plant-site and Tioga, North Dakota are used to boost the pressure of the carbon dioxide to approximately 2,700 psig to ensure delivery to the Weyburn and Midale oil fields at the contractually specified minimum of 2,200 psig. The pipeline is constructed of steel. The segment from the Synfuels Plant to the Tioga, North Dakota area consists of 14-inch diameter outside pipeline. The segment from Tioga to the U.S./Canadian border and continuing to the delivery point at the Weyburn and Midale oil fields consists of 12-inch nominal diameter pipeline. The pipeline passes through the heart of North Dakota oil country and is nearby significant oil fields in Montana. Eleven tap points were installed on the pipeline. These taps would allow take-off of carbon dioxide from the pipeline for a potential customer or customers without forcing a shutdown of the pipeline. The first tap is located near Killdeer, North Dakota and the last tap is located in Canada. The remaining taps are interspersed from the Little Missouri River to the North Dakota/Saskatchewan border.

7. Weir testified DGC has determined that it would be prudent to improve the pipeline's crossing of Lake Sakakawea. Given the protracted drought conditions in the Upper Missouri River watershed, coupled with the management of the reservoir by the United States Corps of Engineers (COE), the level of the reservoir has dropped 30 feet since the pipeline was installed in the year 1999. Specifically, DGC is concerned the pipeline may become exposed and could become a hazard to the public.

8. The construction right-of-way (ROW) width will be 200 feet for the lake crossing. Staging areas on either side of the lake will be required for construction. DGC will use existing roads to access the construction ROW and staging areas. The permanent ROW width will be 50 feet.

9. To reduce any risks associated with the integrity of the pipeline at the lake crossing, DGC will locate the replacement pipeline 100 feet west of the existing line and provide six feet of cover. Once the new line is in place, the abandoned portion of the line will be removed from the lake.

10. Weir explained that the “controlled depth tow” method of construction will be used where pipe sections are welded on-shore and pulled into place. (DGC’s application had stated it would use the “lay barge” method.) Heavy equipment to be used in the excavation activities for the lake crossing will consist of a barge-mounted dragline, towboat, anchor/fuel barge and hydrographic survey boat. The trench will be excavated in the lake bottom to provide six feet of cover. Centerline alignment of the trench will be monitored using a shore-based electronic measuring device. The trench depth will be checked using hydrographic surveying equipment. During excavation, 200 feet of silt curtain will be placed on each side of the excavation/soil storage area to mitigate the movement of silt. The materials to be excavated will comprise approximately 78,000 cubic yards, based on a four-foot wide trench bottom, 2.5:1 side slope, eight-foot trench depth and a length of 11,000 feet. The material will be placed on the west side of the excavation. Once the pipe is in place on the trench bottom, excavated material will be returned to the trench in “plugs” spaced approximately 250 feet apart. The plugs are for fixing the pipe in proper orientation and to prevent movement or displacement during subsequent backfilling operations. The trench will then be backfilled using the excavated spoil material. Once the new line is backfilled, the abandoned portion of the pipeline (11,400 feet) will be pulled from the lake with the use of a 100-ton winch.

11. The pipe size, material and thickness will be the same as the current lake crossing, 0.500-inch wall bevel end 14 inches API 5L Gr. X65 seamless pipe. All pipe and field joints will be coated with fusion bonded epoxy (16 mils), and abrasion resistant epoxy (44 mils) and a two-inch concrete jacket weight coating. Field welds will be 100 percent radio graphed. The pipeline will be hydrostatically tested in accordance with applicable regulations to establish the maximum allowable operating pressure of 2,700 psig. Testing will be conducted for a minimum of eight hours (DGC’s application had stated 24 hours) and will include a leak test.

12. The line will be located 100 feet to the west of the existing line and have a minimum cover in the lakebed of six feet. The length of replacement line will be approximately 11,400 feet and will be tied into the existing line with four 45° elbows as indicated in Figure 1.1 to DGC’s application.

13. The stream is not 100% carbon dioxide. As outlined in Table 1-1 of DGC’s application, the typical analysis of the stream is a composition of 95.95% of carbon dioxide.

14. On average, the stream contains approximately 0.80% hydrogen sulfide, but the hydrogen sulfide content from time-to-time may jump to a maximum as high as 2%.

15. The balance of the stream is made up of very small percentages of various hydrocarbons such as ethane, methane, propane, ethylene and various types of butane. Prior to DGC’s diverting, compressing, transporting and selling this stream for EOR, this stream was combusted in the boilers at the synfuels plant. While the percentage of

hydrocarbons is quite small, given the large volume of the stream, it was economic to use this stream for these hydrocarbons.

16. DGC witness Rick Nelson, senior environmental engineer, testified that the pipeline and associated facilities are designed, constructed, operated and maintained in strict accordance with the requirements of the U.S. Department of Transportation Pipeline Safety Regulations Code of Federal Regulations (CFR) Title 49, Part 195, Transportation of Hazardous Liquids by Pipeline, as well as other applicable codes, regulations and standards in the United States and Canada.

17. Nelson stated that for the initial lake crossing, the pipeline was trenched with a minimum cover of four feet to a lake bottom elevation of 1,805 feet. Below elevation 1,805, the line was laid on the bottom of the lake. Since the installation of the pipeline crossing in 1999, the lake level has dropped approximately 30 feet.

18. DGC applied for approval from the United States Corps of Engineers on April 20, 2007. DGC filed a Consolidated Application for a Certificate of Corridor Compatibility and Route Permit in this proceeding on May 11, 2007. The acquisition of rights to use the temporary lay-down area, which is owned by the North Dakota School Lands Trust, is scheduled to be completed before July 2, 2007. Assuming DGC has the necessary approvals, construction would commence on July 9, 2007. If construction is started on July 9, the project is scheduled to be completed on October 12, 2007; testing would occur on October 15, 2007; and the project would be placed in service on October 17, 2007.

19. Nelson testified sensitive plant and wildlife potentially affected by the project were evaluated. Information related to sensitive species was obtained from several agencies including the U.S. Fish & Wildlife Service (USFWS), North Dakota Game & Fish Department and the U.S. Army Corps of Engineers. Sensitive species potentially present along or near the proposed route include the interior least tern and piping plover. The tern and plover are known to nest and raise young on sandbars and along sparsely vegetated beaches of Lake Sakakawea; however, no active nesting has been documented near the proposed pipeline crossing at Lake Sakakawea.

The pallid sturgeon is the only endangered fish species with potential for aquatic habitats crossed by Lake Sakakawea. The construction schedule DGC has proposed for this Lake Sakakawea crossing (mid-July to late October) will avoid the spawning periods of the pallid sturgeon.

20. No cultural resource studies were performed for this reconstruction project. However, Class I and Class III Cultural Resources Inventory Reports were submitted and approved by the State Historical Society when the pipeline crossing was initially installed. A copy of the Class III Cultural Resource Management Report for the Lake Crossing Area was included as Attachment 1 to DGC's application. This report inventoried cultural resources within the one-mile corridor on U.S. Army Corps of Engineers land in McKenzie and Williams Counties. Figure 1.1 of the Attachment

showed the location of each site within the corridor. Site 32WI305 is the closest site but east of the existing pipeline and should not be impacted by any construction. Site 32MZ151 located on the south bank of Lake Sakakawea near the pipeline is the only site which could be potentially impacted from this project. Based on a preliminary review, the ROW for the pipeline crossing will be at least 200 feet away from this site. To ensure the site is not disturbed, the area will be marked prior to any construction activities.

21. There are no other economical means of delivering carbon dioxide to our EOR customers.

22. DGC's latest Ten-Year Plan was filed with the Commission on November 14, 2006. Nelson testified this Lake Sakakawea reconstruction project was not included in DGC's Ten-Year Plan as DGC was hoping that the snow pack in the Upper Missouri Basin watershed would be average, above average or sufficient such that this replacement would not be necessary. Notwithstanding, obviously DGC's Ten-Year Plan included the existing pipeline crossing of Lake Sakakawea.

23. The proposed pipeline corridor/route is a 1.0 by 2.7 mile area and lies within both McKenzie and Williams Counties in northwestern North Dakota.

24. Nelson testified that DGC has adopted DGC Board Policy Number 11. This Board Policy commits DGC to compliance with federal, state and local health and safety regulations, as well as establishing a strong safety and health program in order to ensure a safe and healthy work place for its employees.

25. Nelson testified that DGC has adopted DGC Board Policy Number 12. In addition to committing DGC to compliance with federal, state and local environmental regulations, this policy recognizes the need to maintain a healthy environment for the benefit of both DGC's employees and the members of the community in the areas surrounding DGC's facilities.

26. When the pipeline was initially permitted, separate Environmental Assessments (EAs) were prepared for the U.S. Forest Service (USFS) and the Bureau of Land Management (BLM) to address the federal lands crossed by the then-proposed route in compliance with the National Environmental Policy Act. In addition, a Section 404/10 Permit application was submitted to the U.S. Army Corps of Engineers for waters of the United States of America (e.g. Lake Sakakawea).

27. The pipeline system has been studied to determine the effectiveness of pipeline safety systems including leak/rupture detection and automatic block valve closure at approximately 14 locations along the pipeline route. Safety systems are designed to mitigate the potential effects of releases from the pipeline by limiting the amount of pipeline product that can be released into the atmosphere in the event of an accidental release.

28. Pipeline safety system evaluations have been conducted; this involved the determination of pipeline safety effectiveness relative to simulations of potential pipeline releases. Through the results of the accidental release simulations, DGC was able to document the effectiveness of pipeline safety systems and enhance the safety of the public and workers.

29. The North Dakota Natural Heritage Inventory also provided database information regarding threatened, endangered, federal candidate and state sensitive plant species. Information related to sensitive plants and animals was also obtained from published and unpublished literature and through consultation with the USFWS, North Dakota Game and Fish Department, USFS and BLM.

30. A telemetry (SCADA) system provides 24-hour monitoring of the pipeline and compressor operations, including pressures, temperatures and flow rates. This telemetry system enhances immediate response capability to any potential problems. The pipeline is also designed to accommodate an instrumented internal inspection device to detect and record the type and location of corrosion or other defects for long-term monitoring of the pipeline integrity.

31. Nelson stated that while this project does not involve the beneficial use of waste energy from an energy conversion facility, the carbon dioxide being transported in the pipeline facility is a gasification process off-gas stream that is put to beneficial use for tertiary oil recovery. It was previously used as a high volume, low-Btu fuel at the synfuels plant and subsequently vented to the atmosphere. Currently, the synfuels plant emits approximately one-half of the carbon dioxide it emitted prior to this project.

32. To the extent practicable, all effects of pipeline reconstruction will be mitigated. All lands disturbed will be returned to their current land uses. No permanent direct or indirect adverse effects are anticipated.

33. No other corridors or routes will meet the proposed project needs.

34. No irreversible or irretrievable commitments of natural resources are anticipated. All areas of natural vegetation within the ROW will be reclaimed with agency-recommended seed mixtures, lake water quality issues will be mitigated with controls and no agricultural lands will be taken permanently out of production.

35. Several direct and indirect economic impacts will result from the proposed project. The project will provide an economic benefit to DGC and the Great Plains Synfuels Plant, a significant source of employment and income for North Dakota residents, and will stimulate the local economy through the spending of workers' wages and DGC purchases of goods and services. The temporary influx of workers during the construction period will affect markets for temporary accommodations in the area and increase local business activity.

36. DGC is not aware of any other planned developments near the proposed corridor and route.

37. The location and selection criteria utilized were to essentially relocate the replacement line as close to the existing line as possible consistent with safety considerations during the construction process.

38. Nelson testified that with the exception of Lake Sakakawea itself, the route alignment within the corridor will avoid both exclusion and avoidance areas.

39. The proposed facility would not cross any agricultural production or affect the agricultural quality of the cropland, come within 1,000 feet of family farms, ranches or rural residences or any land suitable to irrigation.

40. Berms will be constructed on slopes to control runoff and minimize erosion. Staging areas will be located a minimum of 50 feet from the shoreline with hazardous storage sites and equipment refueling sites at least 100 feet from shoreline, thereby minimizing the potential for impacts to surface drainage flow.

41. The proposed facility will not affect any noise-sensitive land uses, have no visual effect on adjacent areas, no impact on any extractive or storage resources and no impact on any wetlands, woodlands or wooded areas; however, a few trees will be removed at the high water mark of the lake in the temporary lay-down area. Nelson testified that DGC is willing to replace any trees destroyed in the construction process on a two-for-one replacement basis as required by Commission policy.

42. The proposed facility would have no impact on communication facilities.

43. All pipeline construction will be in strict conformance with U.S. Department of Transportation Pipeline Safety Regulations (CFR Title 49 Part 195). A telemetry system and internal inspection device is used to monitor the integrity of the pipeline and enhance response time to the pipeline in the event of an emergency. Water used for hydrostatic testing of the new pipeline will be chemical free and will be properly disposed of after testing has been completed.

44. In the unlikely event of an accidental release from the pipeline, carbon dioxide and small amounts of other minor constituents including H₂S would be released into the atmosphere. In the event of a pipeline rupture, block valves are used to isolate the affected section of pipe and thus limit the amount of product released. Leaks are more difficult to detect and product could potentially be released over a longer period without detection.

45. In order to predict the possible human health consequences that could potentially result from pipeline ruptures or leaks, DGC conducted a worse case modeling exercise to determine the extent of the area near the pipeline that might be affected by ruptures

or leaks. The modeling results indicate that a catastrophic failure resulting in a hole as large as the pipeline itself presents the worst-case scenario in terms of highest concentrations of carbon dioxide or H₂S at the greatest distances. A full pipe diameter rupture could potentially produce concentrations of carbon dioxide considered immediately dangerous to life and health (IDLH) at a distance of 760 feet. Assuming that H₂S is approximately 0.89 mol percent of the pipeline product, a full diameter failure of the pipeline could potentially cause H₂S concentrations to be considered an IDLH at a distance of 1,940 feet from the rupture.

46. A statistical analysis was performed to assess the risks to an individual from accidental release of carbon dioxide and H₂S at certain locations or receptors identified along the pipeline route. Carbon dioxide and H₂S total impact probabilities at receptors were estimated using data on the likelihood that an accident will occur anywhere along the pipeline, meteorological conditions, and the chance that an accident will be located within the predicted maximum threshold impact distance from a receptor. Only the H₂S 30-minute IDLH concentration of 100 ppm was predicted to reach a receptor, and the predicted probability of impact was one in 44,000. The probability of impact for the other thresholds did not exist since the threshold concentrations were not predicted to be observed at any receptors.

The total impact probabilities determined in this report only assess the probability of an impact at the receptor indicated. Variables such as the population density and frequency of visits at these receptors have not been included in these calculations since the distribution of these variables is unknown. Implicit in the impact probabilities is a population of 1.0 person-years (e.g. one person at the receptor for every minute during the year). Therefore, the actual carbon dioxide and H₂S exposure risks may be overstated for remote areas where population densities are low and receptor occupancy is not full-time. Conversely, the risks may be understated for receptors with high population densities and/or relatively long residence periods.

47. DGC has developed an Emergency Response Plan. This Plan addresses an accidental release of the operating pipeline and outlines pre-emergency planning and education, operational safety precautions, emergency response procedures and associated agency coordination. DGC has distributed information regarding emergency preparedness and response to appropriate local agencies and the public residing adjacent to the proposed facility.

48. Impacts to animal health and safety will be minimized through sound construction and operation practices. Surface water, typically utilized by animals, will be protected from contamination by locating staging areas a minimum of 50 feet from stream banks and hazardous substance storage areas and refueling sites a minimum of 100 feet from stream banks.

49. Impacts to plant life would be limited to the disturbed portions of the ROW.

50. Nelson stated DGC has a longstanding commitment to North Dakota's people and economy, providing continuous employment for managerial, technical and operating staff. DGC employs a substantial number of North Dakota natives. For this project, DGC is utilizing North Dakota staff for project management and technical support. DGC will solicit bids from North Dakota-based companies for equipment and services whenever possible.

51. DGC has attempted to minimize the cost by installing the new line as close to the existing line as possible and reducing the downtime for the carbon dioxide pipeline when the tie-ins are made.

52. No citizen coordinating committees were consulted, as DGC believes none are appropriate for this type of pipeline project.

53. While DGC's present customers are located in Saskatchewan, the pipeline is installed with fittings (mainline valves) which would allow for the construction of lateral pipelines to serve potential future customers in North Dakota.

54. Installation of the pipeline will be performed by companies contracted for the project. DGC requires that these companies comply with all appropriate federal, state and local laws.

55. During construction, DGC will provide silt control/monitoring in the lake and after construction, it will monitor revegetation.

56. The proposed pipeline parallels the existing pipeline and ROW.

57. The proposed facility does not involve any other existing or proposed transmission facilities.

58. The primary design and construction limitations considered are to provide a minimum of six feet cover over the new pipeline and to minimize impact to the lake and the adjacent shore land.

59. Nelson testified that DGC is committed to constructing the proposed pipeline as economically as possible while strictly adhering to the Commission's criteria. The anticipated construction cost for installation of the proposed facility is \$10.5 million.

60. Surveys for the interior least tern and piping plover are conducted annually by the COE. Based on discussions with the COE and USFWS, no nests have been recorded near the proposed route. If agency surveys indicate that active nests are present within 0.25 miles of the route, potential mitigation measures will be evaluated in coordination with the COE and USFWS.

61. The staging area ROW will be cleared of obstructions and graded where necessary to permit construction equipment to operate safely. The extent of clearing

and surface preparation will be restricted to the ROW and to the minimum area necessary for construction. DGC will adhere to landowner easement provisions.

62. Shrubs will be removed from the ROW. The root systems of woody plants on the spoil side of the ROW will be preserved where possible. Where shrubs are large enough to interfere with construction equipment, additional clearing may be necessary. Cleared vegetative material may be chipped and spread over disturbed areas to serve as mulch, burned where permitted, placed in piles for wildlife habitat or removed to disposal areas as specified by agencies with jurisdiction.

63. Trees will be cut and removed from the ROW, staging or work areas and salvaged or disposed of according to landowner or agency requirements. Trees will be felled parallel to and within the construction ROW.

64. In some areas, cutting and filling may be necessary to permit safe construction activities. Cuts and fills will be limited to that necessary for trenching operations. Topsoil will be preserved to the extent practical. Subsoil materials from cuts will be stockpiled for recontouring upon completion of trenching operations. Excess material will be shaped to blend with adjoining lands and to provide a landform suitable for revegetation.

65. Trenching on land will be completed with a backhoe. Where standard ditching is performed, the ditch spoil will be placed in one windrow. Where double ditching is required, the topsoil will be excavated and placed in a windrow separate from the ditch subsoil. Mixing of topsoil with subsoil will be prevented by stripping topsoil either from the full work area or from the trench and subsoil storage area (ditch plus spoil side method).

66. All land trench areas will be restored to original contours.

67. After the pipe has been lowered into the trench and its position inspected and approved, the trench will be backfilled. With standard backfilling, the windrow of spoil material will be returned to the trench with a crown of soil, normally 12 inches, which compensates for settlement. Excess spoil will be spread in a thin layer over the ROW.

68. Where topsoil is segregated, the windrow of subsurface soil will be returned to the trench leaving sufficient space for the return of the topsoil windrow.

69. Access to the ROW will normally be from existing public roads. Where public roads do not provide sufficient access to the ROW, temporary access roads may be required. No new permanent access roads will be required. The contractor will be responsible for obtaining permission for utilizing private roads and trails. Upgrading existing trails or constructing new temporary access roads, if required, will be in accordance with the following guidelines: Temporary roads will be located where possible to avoid erosion-prone areas, drainages, areas of woody cover, wetlands or other sensitive areas and are subject to approval by DGC and the landowner, or

appropriate agency. Temporary roads will be designed with culverts properly located to minimize erosion and sedimentation dust will be controlled, where required, by a suitable water sprinkling program or surfacing with dust-free materials.

70. The “controlled depth tow” method of construction will be used where pipe sections are welded on-shore and pulled into place. Heavy equipment to be used in the excavation activities for the lake crossing will consist of barge-mounted dragline, towboat, anchor/fuel barge and a hydrographic survey boat. Other equipment will consist of that needed to transport, offload, position and handle pipe, including welding machines, bulldozers, track hoes, motor graders and miscellaneous service vehicles. Fuel will be provided in support vehicles designed for safety and for pollution control. Fuel reserves, other than that contained in the service vehicles, will not be stored on-site.

71. Bank erosion control measures will be implemented at both shorelines to prevent exposure of the pipes to damage and to prevent loss of material shoreline. The control measures will be implemented in the shoreline interval beginning at the water level at the time of construction and continuing to existing riprap. As required by the U.S. Department of Transportation, Office of Pipeline Safety and in keeping with good industry practices, DGC will maintain the lake banks at the pipe crossing and augment the erosion control measures if erosion occurs.

72. Temporary erosion and sedimentation controls will be installed immediately after initial disturbance of the soil. They will be properly maintained on a daily basis throughout construction and reinstalled as necessary until replaced by permanent erosion controls or restoration is complete. Where appropriate, slope breakers will be installed to reduce runoff velocity and divert water off the construction ROW. These will be constructed of soil, silt fence, staked hay or straw bales, or sandbags depending on site conditions. The type and spacing will be determined based on slope, soil erodability, ground cover, expected runoff and capacity requirements. Sediment barriers will be used to stop or reduce the flow of sediment. These will be constructed of materials such as silt fence, staked hay or straw bales or sandbags. Water body sediment barriers will be installed immediately after initial disturbance of the water body or adjacent upland. These will be installed along the edge of the construction ROW as necessary to contain spoil and sediment within the ROW. These sediment barriers will be removed during ROW cleanup. Mulch will be applied to stabilize the soil surface; it will consist of straw, hay, erosion control fabric or some functional equivalent. Mulch will be applied before seeding if restoration activity is interrupted for extended periods, such as when seeding cannot be completed due to seeding period restrictions.

From the foregoing Findings of Fact, the Commission now makes its:

Conclusions of Law

1. The Commission has jurisdiction over the applicant, DGC, and over the subject matter of this application under North Dakota Century Code Chapter 49-22.
2. The pipeline proposed by DGC is a transmission facility as defined in North Dakota Century Code Section 49-22-03.
3. DGC's proposed pipeline is of such length, location and purpose that it will minimize adverse effects upon the environment, and upon the welfare of the citizens of North Dakota, while ensuring continuing system reliability, integrity and efficient use of natural resources.
4. DGC's proposed route is compatible with the environmental preservation and efficient use of resources.
5. It is appropriate for the Commission to issue DGC a Corridor Certificate and Route Permit.

From the foregoing Findings of Fact and Conclusion of Law, the Commission issues its:

Order

The Commission orders:

1. DGC's application for a waiver of procedures and time schedules is granted.
2. Certificate of Corridor Compatibility Certificate Number 97 designating a transmission facility corridor is issued to DGC.
3. Route Permit Certificate Number 107 designating a transmission facility route is issued to DGC.
4. A preconstruction conference shall be held prior to commencement of any construction, and shall include a DGC representative, the construction supervisor, and Commission staff to ensure that DGC fully understands the conditions set forth in this order.
5. DGC shall comply with the rules and regulations of all other agencies having jurisdiction over any phase of the proposed pipeline, and shall obtain all other necessary licenses and permits, and shall provide copies of all licenses and permits to the Commission prior to construction of the pipeline.

6. DGC shall inform the Commission of its intent to start construction on the pipeline prior to the commencement of construction, and once construction has started, DGC shall keep the Commission updated of construction activities on a weekly basis.
7. The pipeline shall be buried to a minimum depth from the ground surface to the top of the pipe of 72 inches across the lakebed.
8. DGC shall construct and operate the pipeline in the manner described in its Application and at the hearing, and in accordance with all applicable safety requirements.
9. DGC shall promptly report to the Commission the presence in the permit area of any critical habitat of threatened or endangered species, or of bald or golden eagles that DGC becomes aware of and which were not previously reported to the Commission.
10. All cultural resource mitigation plans must be submitted to the North Dakota State Historical Preservation Officer for approval prior to the start of any fieldwork and construction activity. If any cultural resource, paleontological, archeological, historical, or gravesite is discovered during construction, it shall be marked, preserved and protected from further disturbances until a professional examination can be made by the State Historical Society, a report of such examination is filed with the Commission, and clearance to proceed is given by the Commission.
11. All crossings of graded roads shall be bored unless the responsible governing agency specifically permits DGC to open cut the road. All pre-existing roads and lanes used during construction shall be restored to a condition that will accommodate their previous use, and areas used as temporary roads during construction shall be restored to their original condition.
12. Construction shall be suspended when weather conditions are such that construction activities will cause irreparable damage, unless adequate protection measures approved by the Commission are taken.
13. To the extent available, at least 12 inches of topsoil over and along trench areas where cuts must be made shall be stripped and segregated from the subsoil and be replaced only after the subsoil is replaced.
14. Reclamation along the right-of-way shall be continuous and coordinated with the construction.
15. Reclamation, fertilization and reseeding are to be conducted by DGC according to the National Resources Conservation Service recommendations, unless otherwise specified by the landowner and approved by the Commission.

16. DGC's obligation for reclamation and maintenance of the ROW shall continue throughout the life of the pipeline.

17. The width of any clear cuts through any wooded areas and shelterbelts shall be kept at a maximum of 50 feet, to the extent possible.

18. DGC shall plant replacement trees and shrubs on a two-to-one basis for each tree or shrub destroyed in the construction process. The Commission will monitor the survival rate of replacement tree and shrub plantings for a period of three years after planting, and may order additional plantings if survival rates are less than 75%. DGC will be required to provide information to the Commission as to the location of tree planting sites and the number of plantings at each site.

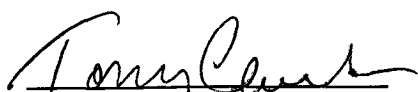
19. DGC shall provide the Commission with a copy of the design specifications for the construction of the pipeline showing the location of the pipeline as built.

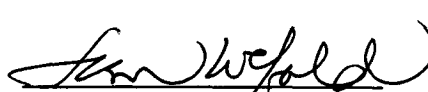
20. Aquatic nuisance species (ANS) are a major concern of the North Dakota Game and Fish Department (the Department). The contractor, including any and all subcontractors or other involved in this project, are required to take appropriate and reasonable precautions to prevent the introduction of ANS to the state's waters or the movement of ANS within North Dakota or between North Dakota waters. These ANS precautions extend to any and all vehicles, vessels, trailers, pumps and such equipment that will be used in the waters of the state. The contractor will provide the Department a reasonable opportunity to inspect all vehicles, vessels, pumps, and equipment that will be used in the waters of the state prior to those items being launched or placed in the waters of the state.

21. The authorization granted by the route permit is subject to modification by order of the Commission if deemed necessary to further protect the public or the environment.

22. After the corridor and route certificates have been issued and all costs of hearings, publication, and any other related expense have been paid from the application fee, the Commission shall refund all but \$5,000.00 of the remaining application fee. If the balance of the application fee at the time is less than \$5,000.00, the Commission shall retain the entire amount. When construction and reclamation are complete and when the Commission has concluded that DGC's tree mitigation project is satisfactory, the remaining balance of the application fee shall be refunded.

PUBLIC SERVICE COMMISSION


Tony Clark
Commissioner


Susan E. Wefald
President


Kevin Cramer
Commissioner