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11 December 2013

Mr. Darrell Nitschke, Executive Director
North Dakota Public Service Commission
600 East Boulevard, Dept. 408
Bismarck, ND 58505-0480



RE: Great River Energy DC Transmission Line Clearance Issues

Dear Mr. Nitschke:

Great River Energy has been conducting an analysis of its transmission lines in response to a Recommendation to Industry (Consideration of Actual Field Conditions in Determination of Facility Ratings) issued in October of 2010 by the North American Electric Reliability Corporation (NERC). This NERC Recommendation was issued not only to Great River Energy, but to all electric utilities across North America. The Recommendation contained three basic elements: 1) Provide an Action Plan, 2) Conduct an Assessment, and 3) Remediate Identified Issues.

As part of the Action Plan, which Great River Energy submitted to NERC in January 2011, utilities were asked to categorize their facilities as "high priority", "medium priority", or "low priority." Great River Energy's "high priority" lines, which consist of its 500 kV, 400 kV dc, and 345 kV lines, have now been assessed.

The analysis revealed a few spans (see attached figures) of Great River Energy's 400 kV "DC" line in North Dakota **that meet the clearance requirements as specified by the 2007 National Electric Safety Code (NESC)** but do not meet the clearance requirements outlined in Special Route Condition 4 of the Permit to Construct Transmission Facility issued by the North Dakota Public Service Commission (PSC) in 1976 (attached). The permit states that conductor height clearance from ground shall be a minimum of 35 feet at a conductor temperature of 130° F while transmitting 1000 MW of power, and minimum ground clearance shall be 50 feet where conductor crosses presently irrigated land. The discrepancies found are summarized in the table below.

Span	Required Permitted Clearance	Actual Clearance	Difference
Structures 64-65	35'	34'	1.0'
Structures 65-66	35'	31.4'	3.6'
Structures 137A-138	35'	34.9'	0.1'
Structures 236-237	35'	34.8'	0.2'

Mr. Darrell Nitschke
11 December 2013
Page 2

The NESC clearance requirements are 28.1' for roads, streets and fields. Great River Energy notes that the NESC standards are globally accepted as good utility practice and are the standards typically applied by the PSC Commission in all current transmission line route permits; therefore, it is our opinion that they are the standards to which we should be held. This is a very small proportion of span clearances (relative to the many hundreds of spans comprising the built line) that are not in compliance with the 1976 permit conditions, and none of these spans is over agricultural land (they are all over grassland). Great River Energy does not believe that these relatively small clearance discrepancies warrant the considerable resources that would be required and substantial expense that would be incurred to bring these few spans into compliance with these old permit conditions.

Additionally, to our knowledge, there have been no documented complaints of non-compliance with these conditions, relating to conflicts of the built project with land uses. If an aggrieved landowner were to file a formal complaint and submit evidence that non-compliance has a direct substantial effect upon cultivated farming operations, and that the impacted parcel was cropland when the project was constructed, Great River Energy will report the complaint to the PSC and both Great River Energy and the PSC (formally if necessary) could then address the complaint under standard complaint procedures applied to permits issued today.

There are a few similar permit condition discrepancies in the Minnesota portion of the DC line that Great River Energy has addressed with Minnesota Public Utilities Commission (PUC) staff. In an email provided by PUC staff (attached), staff concurred with Great River Energy's assessment that NESC standards are paramount and that the benefits of making the required investment to eliminate the permit condition clearance issues do not justify such a commitment at this time.

Great River Energy respectfully requests an opinion from the PSC regarding these minor clearance issues. Please feel free to call me at 763-445-5214 with any questions you may have.

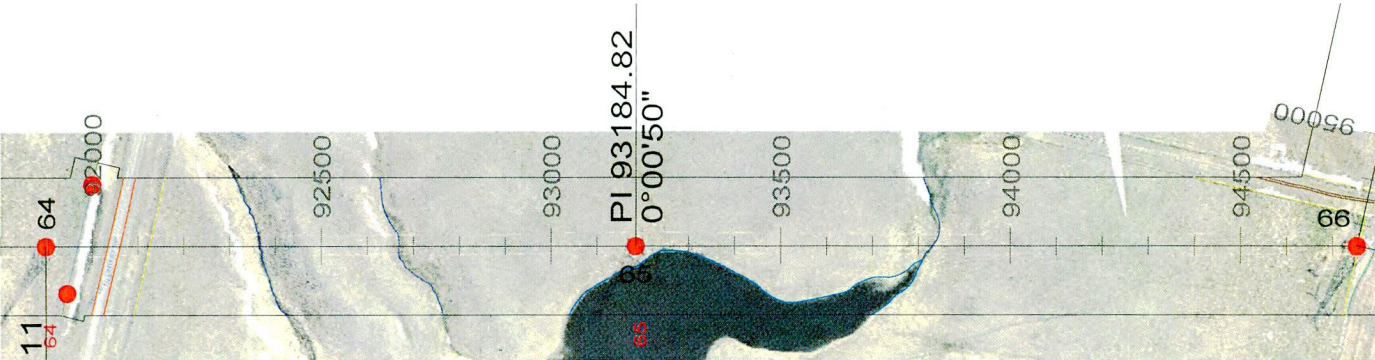
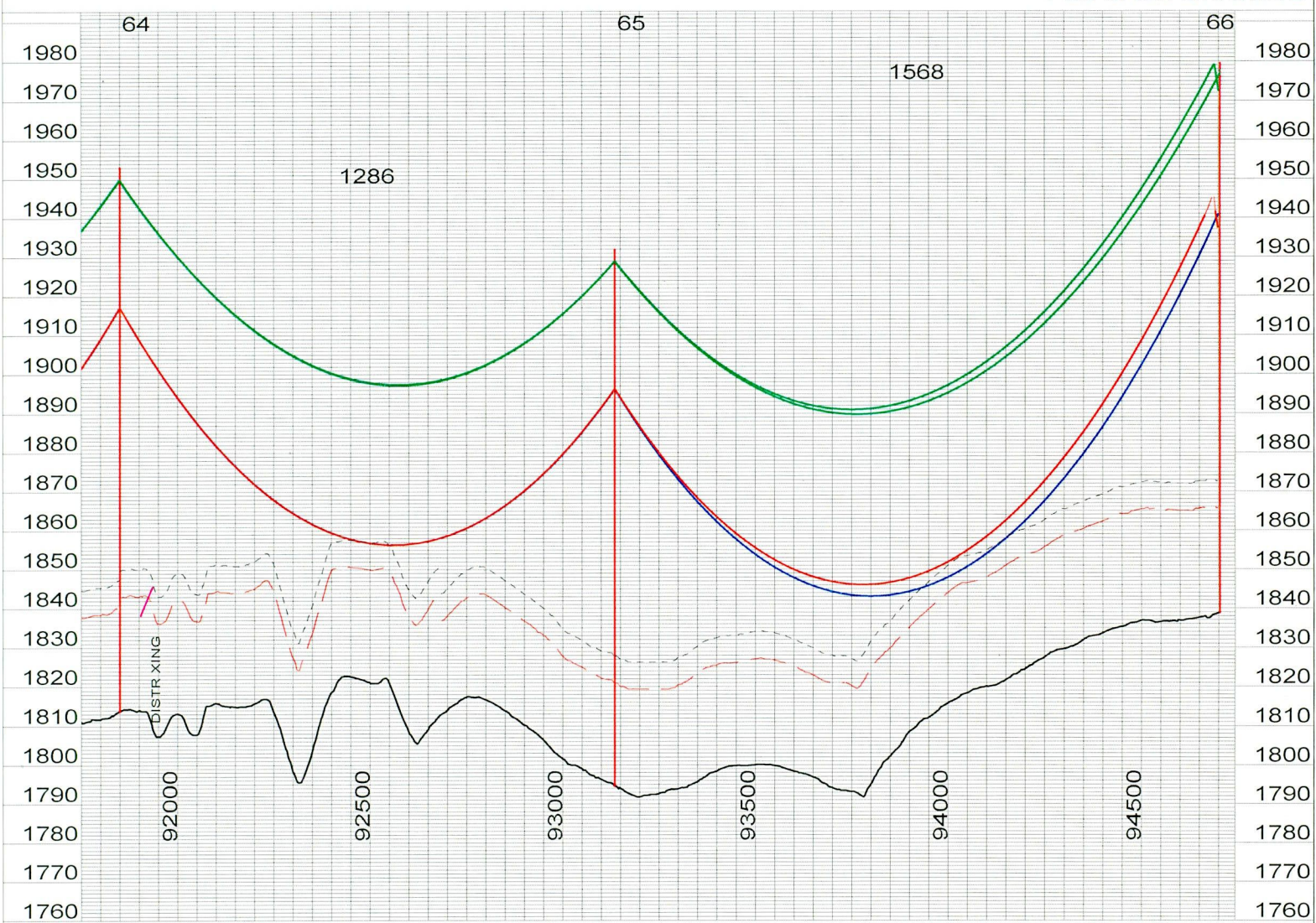
Sincerely,

GREAT RIVER ENERGY



Carole L. Schmidt
Supervisor, Transmission Permitting and Compliance

Attachments



SPAN 64 - 66
 DC LINE 400 KV PERMIT CLEARANCE
 CONDUCTOR SHOWN AT 130°F

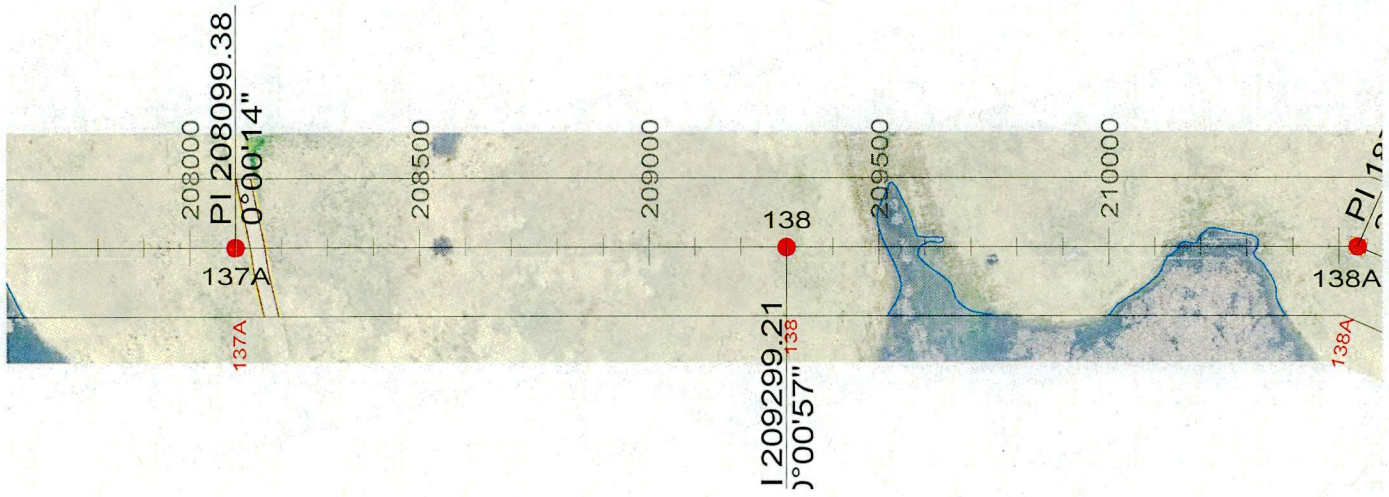
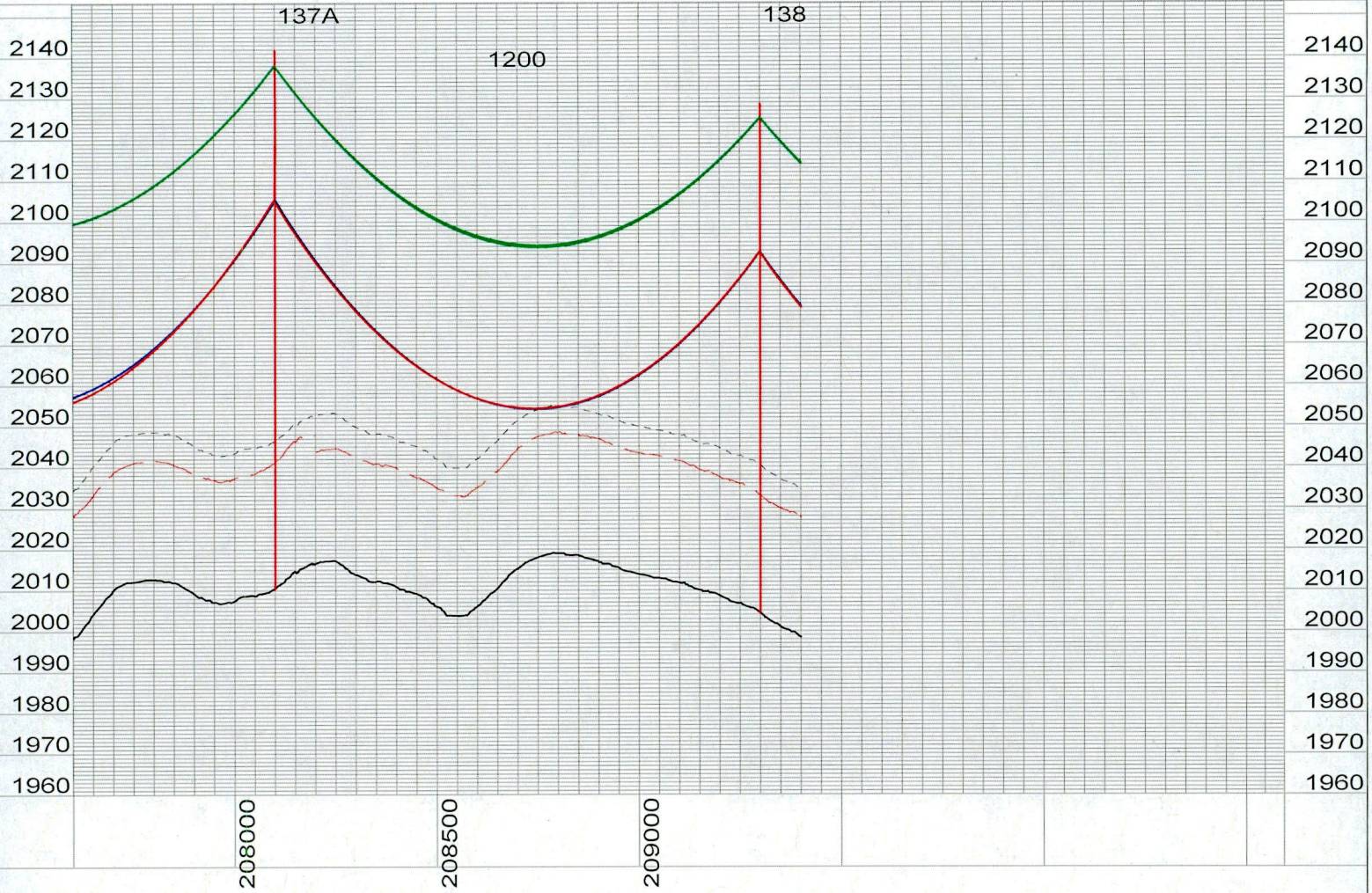
12/10/2013

GREAT RIVER ENERGYSM



400.0 FT. HORIZ. SCALE

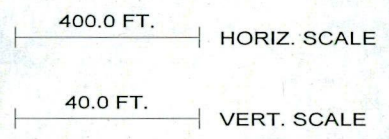
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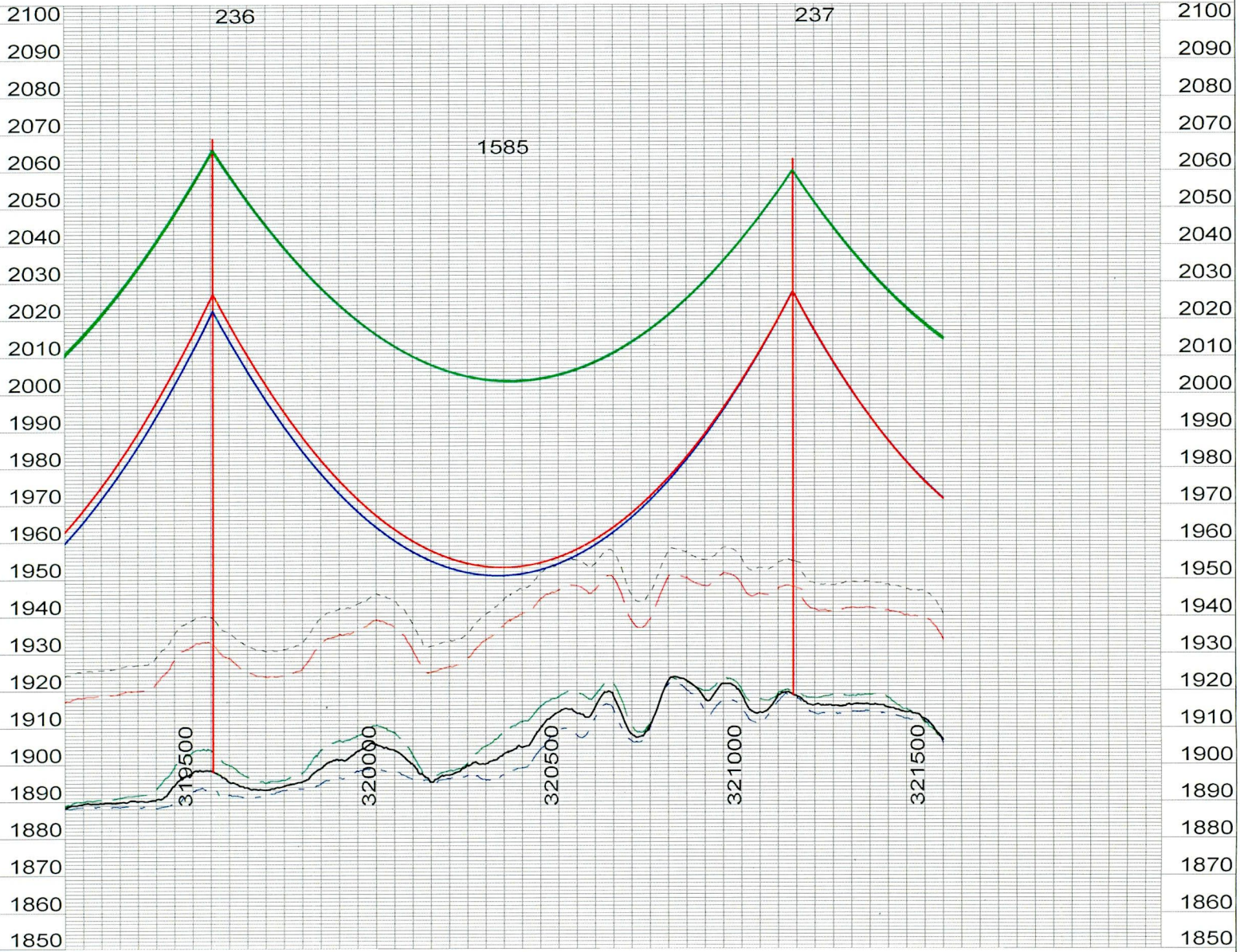


SPAN 137A - 138
 DC LINE 400 KV PERMIT CLEARANCE
 CONDUCTOR SHOWN AT 130°F

12/10/2013

GREAT RIVER ENERGYSM





SPAN 236 - 237
 DC LINE 400 KV PERMIT CLEARANCE
 CONDUCTOR SHOWN AT 130°F.

12/10/2013

GREAT RIVER ENERGYSM



PUBLIC SERVICE COMMISSION

STATE OF NORTH DAKOTA

PERMIT

TO

CONSTRUCT TRANSMISSION FACILITY

Permit No. 1

KNOW ALL MEN BY THESE PRESENTS That the North Dakota Public Service Commission grants to Cooperative Power Association (CPA) and United Power Association (UPA), which are Minnesota Cooperative Corporations licensed to do business in the State of North Dakota, and which are hereafter referred to as CPA-UPA, the authority to construct, operate and maintain a +400 kilovolt (kV) direct current (dc) high voltage electric transmission line (HVTL), including associated ground electrode, from CPA-UPA's 1000 megawatt (MW) lignite coal-fired generating plant located near Underwood, North Dakota (Coal Creek Station), along the route designated herein, to a point on the North Dakota - Minnesota border in Richland County, North Dakota, which line will then run to the Dickinson Substation in Wright County, Minnesota, at which point it will be converted to alternating current and transmitted to CPA-UPA's member distribution cooperatives in Minnesota and Wisconsin.

The permit to construct, operate and maintain this transmission line and associated ground electrode in the State of North Dakota is subject to the standard conditions and the special conditions which are attached hereto.

Dated at Bismarck, North Dakota, this 17th day of December, 1976.

PUBLIC SERVICE COMMISSION:

ATTEST:

Janet Sauter
Secretary

Richard Elkin
Richard Elkin, Commissioner

Bruce Hagen
Bruce Hagen, Commissioner

Ben Wolf
Ben Wolf, Commissioner

STANDARD ROUTE PERMIT CONDITIONS

All route permits issued by the Commission shall be deemed to contain the following standard conditions:

- (a) Except where fee title to lands is required for associated facilities or where specifically authorized by a Commission order, no utility shall construct a transmission facility upon lands to which fee title has been purchased or acquired by eminent domain;
- (b) An easement for right of way shall be deemed to contain the following conditions:
 - (1) The easement for right of way shall be limited to the right to construct, maintain and use the facility within the right of way proposed and as finally approved by the Commission in the route permit. All land use not in conflict with the right to construct, use and maintain the facility on the right of way shall remain in the landowner.
 - (2) The easement shall extinguish automatically upon termination of the use of the right of way as authorized in the permit.
 - (3) In the event of a termination of the use, the utility's right under its acquired easement shall revert to the owner of the land, subject to the utility's right and duty to remove its facilities from the land.
 - (4) The utility that owns the facility at the time of the termination of use shall have access to the right of way for a period of 12 months from the date of discontinuance to remove and salvage the facility. Any facility not removed within said time shall not be removed except on order of the Commission, and then only upon sufficient assurance to the Commission that the facility will be removed and the right of way reclaimed as required in these rules and regulations.
 - (5) The utility owning the transmission facility at the time of its termination of use shall be responsible for the removal of said facility and the reclamation of the right of way.
- (c) A utility may take temporary construction easements as required to construct the facility, which easements shall terminate upon completion of the construction.
- (d) Any variance from the designated route will be permitted only after the utility has notified the owners and tenants affected and has obtained approval from the Commission.
- (e) Interference with the landowner's right to the use of land within the right of way, or damage to adjoining or nearby property, occurring in connection with the construction, operation, or maintenance of transmission facility and for which the utility or any of its agents, employees, contractors or subcontractors would be liable under the laws of this state, shall be compensated for within a reasonable time of the occurrence of the interference or damage. The utility shall be responsible for meeting this requirement, and its failure to do so may constitute grounds for the suspension, revocation or further conditioning of its permit. Any property owner suffering such interference or damage, which is not compensated for within a reasonable time after notice to the utility, may file a complaint with the Commission in the manner provided in these rules and regulations.

- (f) Any suitable plant growth material removed in connection with the construction, maintenance and use of a facility shall be segregated from the deeper-lying soil materials and returned to the site after backfilling and restoration of site topography. Such material shall be stabilized against wind and water erosion by maintaining a cover of sod-forming grasses or through the employment of such other erosion control methods as may be approved by the Commission.
- (g) The Commission, its authorized agents and employees, may enter upon the route at any reasonable time, for the purpose of conducting tests, taking samples and determining whether the route is being utilized in compliance with the Act, these rules and regulations and the permit. A written report of every entry with findings shall be filed in the office of the Commission and with the applicant.
- (h) The utility shall install, maintain and report the results of such testing and monitoring programs and devices as the Commission may from time to time require.
- (i) Reclamation of right of way after termination of the use of the facility shall be done in a manner prescribed by the Commission and shall include, but not be limited to:
 - (1) The removal of all structures, erections and facilities, both above and below ground, except that concrete transmission tower footings may be removed to a minimum depth of three feet below the natural surface of the land;
 - (2) Any backfilling and grading necessary to fill voids and restore the site topography;
 - (3) The spreading over backfilled areas of up to two feet of suitable plant growth material or such lesser thickness as may be naturally present within the right of way.
 - (4) The return of the right of way to its preconstruction agricultural capability or other reasonable land-use as approved by the Commission.
- (j) The failure of any utility to reclaim right of way as required under these rules and regulations shall be grounds for suspension or revocation of all certificates and permits of said utility.
- (k) Upon the failure of a utility to reclaim right of way upon termination of the use of the facility in accordance with these rules and regulations, the Commission may:
 - (1) Sell or salvage the facility and use any proceeds acquired therefrom for reclamation of the lands;
 - (2) Deny all future applications for certificates and permits of the utility until said reclamation is completed; and
 - (3) Institute proceedings for the suspension or revocation of other certificates of the utility.

SPECIAL ROUTE PERMIT CONDITIONS

Permit No. 1

A. DESIGN

1. The line shall normally be operated at +400 (+2.5 percent) kilovolts direct current and shall be built in accordance with the specifications described in CPA-UPA's application except as modified in the Commission's order and this permit.

2. The width of the transmission line right-of-way shall not exceed 160 feet.

3. The centerline of the transmission line shall be as shown in Route Hearing Exhibit #14, as amended and supplemented by Exhibit #59, and as further amended by the attached maps and Designated Realignments. Towers shall be located as shown in Route Hearing Exhibit #14, as amended and supplemented by Exhibit #59 and as further amended by the attached Conditions for Structure Locations. Deviations from these specific tower locations will be allowed with written consent of the landowner and notice to the Commission. Such notice shall be given to the Commission no later than 30 days prior to construction. Tower locations may also vary from those shown on Exhibits 14 and 59 where deviation is reasonably necessary as a result of centerline alignments which differ from CPA-UPA's proposed route. CPA-UPA shall consult with the landowner and tenant with regard to tower placement along those portions of the route which differ from CPA-UPA's proposed route and for which the tower locations do not appear in Exhibits #14, as amended and supplemented by Exhibit #59. In these instances, CPA-UPA may deviate from the designated centerline with the prior written approval of the landowner and the Commission.

4. The conductor height clearance from ground shall be a minimum of 35 feet at a conductor temperature of 130 degrees Fahrenheit while transmitting 1000 megawatts of power. The minimum ground clearance shall be 50 feet where the conductor crosses presently irrigated land.

B. HEALTH AND SAFETY

1. The transmission line shall be constructed, operated, and maintained in a manner consistent with accepted safety standards for high voltage transmission lines.

2. The transmission line shall be constructed, operated, and maintained in such a manner as to ensure that there will be a minimal adverse effect on plant life.

3. The transmission line shall be operated in such a manner that generation of ozone, oxides of nitrogen, electrostatic fields and electromagnetic fields will not be injurious to human or animal life.

4. The transmission line shall not be allowed to operate in a manner that would cause the ground level concentrations of ozone and oxides of nitrogen attributable to the transmission line to exceed the North Dakota Health Department ambient air quality standards.

5. CPA-UPA shall engage competent personnel to monitor the levels of ozone and oxides of nitrogen along the right-of-way in the State of North Dakota in one location near Jamestown prior to the operation of the line to gather baseline data, and for two years after commencement of operation for the purpose of recording levels of generated ozone and oxides of nitrogen. In the event that biologically significant levels of these photochemical oxidants are generated at the North Dakota location by the direct current transmission line, CPA-UPA shall continue the monitoring program and shall be responsible for performing studies of the effects of these oxidants upon vegetation. The results of the monitoring program and the results of the studies which are conducted under the direction of the Minnesota Pollution Control Agency shall be submitted by CPA-UPA to the Commission as compiled.

6. CPA-UPA shall ground all metal buildings, buildings with metal roofs, and other metal structures and fences located within the right-of-way and within 100 feet of the right-of-way. Non-electric fences shall be grounded at intervals of not more than 100 feet.

7. The transmission line shall be operated in such a manner that ground level audible noise produced by the transmission line at the edge of the right-of-way shall not exceed 52 dB(A) under wet conductor conditions.

8. CPA-UPA shall place the appropriate aircraft warning devices or markings as required by the North Dakota Aeronautics Commission and the Federal Aviation Administration.

9. CPA-UPA shall prepare a safety booklet which shall describe:

- a. Any dangers or hazards that are inherent in the transmission line;
- b. Any activities or uses that are prohibited within the transmission line right-of-way; and
- c. Reasonable safety precautions for activities within the transmission line right-of-way or its vicinity.

This booklet shall be submitted to the Commission for approval, and after approval shall be mailed by CPA-UPA to the owner and tenants of all lands traversed by the line, and shall be made available to the public upon request, prior to and during the operation of the transmission line. Proof of such mailing shall be filed with the Commission.

10. CPA-UPA shall keep the Commission apprised of the initiation of any tests or studies that it conducts or has knowledge of concerning the effects of high voltage direct current transmission lines upon health and concerning the safe operation and maintenance of these lines, shall forward copies to the Commission of the results of studies conducted by CPA-UPA, and shall inform the Commission of the existence of any other such studies not conducted by CPA-UPA.

11. All existing electric fences within the transmission line right-of-way and within 100 feet thereof shall be adapted by CPA-UPA to provide discharge to ground when not in operation.

12. The transmission line shall be designed, constructed and operated in such a manner that the maximum electrostatic short-circuit current shall be limited to 34 mA dc and the effective capacitive discharge energy shall be limited to 25 joules between the ground and any large object under or near the transmission line including, but not limited to, a motor vehicle, large agricultural equipment and implements (with or without a boom), fence, building or structural part, or irrigation device. In the event that the above current or energy level limits may be exceeded on permanent structures, CPA-UPA shall take such miti-

gative measures as may be required to redundantly ground such objects to limit the potential shock current and energy to the above limits.

13. The transmission line shall be designed, constructed and operated in such a manner that the total electric field shall not exceed 33 kV/m measured at ground level for +400 kV dc line operation. The total electric field is a combination of the electrostatic field and space charge field as defined in HVDC Reference Book of the EPRI-HVDC, The Dalles Project, Copyright January 1977, published by Electric Power Research Institute (EPRI, Palo Alto, California).

C. CONSTRUCTION

1. The transmission line shall be built in accordance with the construction standards and practices described in the CPA-UPA application except as modified herein.

2. All reasonable efforts shall be made in clearing to maximize preservation of natural beauty and conservation of natural resources and to minimize adverse effects on the landscape and waters of the state.

3. Before clearing or construction is begun a pre-construction conference shall be held among CPA-UPA, its contractors and Commission staff to ensure that the contractors and those involved with field inspection fully understand the clearing and construction conditions set forth in this permit.

4. The following limitations shall apply during construction and operation. Modifications to the dimensions given in subsections a through j below may be directed as a result of an on-site survey and pre-clearing conference performed jointly by CPA-UPA, contractors and Commission staff:

- a. Fruit trees and ornamental shrubs other than as a part of a shelter belt (as described in Trees And Shrubs For The Northern Plains /1965/, by Donald G. Hoag, North Dakota Institute For Regional Studies, Fargo, North Dakota) shall not be cut or removed without prior approval of the landowner.
- b. Brush and low growing shrubs that will not interfere with construction will not be cut.
- c. A clearcut for stringing the conductors will not exceed 15 feet in woodlands. Clearcuts in shelter-belts shall be made only after an on-site inspection and with Commission approval.

- d. Clearing for tower erection shall be limited to 160 feet square except where one or more sides of the base adjoins an open area of at least 160 feet square. In these cases, clearing shall be limited to 20 feet beyond the tower bases, unless a larger area is required for conductor stringing operations.
- e. Diseased and dying trees within the right-of-way may be removed after prior notice to the landowner.
- f. Any tree in the right-of-way which would come within 15 feet of the conductor in any situation shall be deemed a danger tree. Danger trees may be trimmed to provide a clearance of not more than 15 feet from any point of possible contact. No other trees within the right-of-way shall be trimmed.
- g. All clearcuts beyond the limits specified herein shall be replanted with tree or shrub species selected by the landowner from a list prepared by the Commission and approved by CPA-UPA. This replanting may be waived by the landowner where the clearing occurs in other than natural woodlands and brushlands. If the landowner does not select the species to be planted, the selection will be made by the Commission.
- h. Rights-of-way through wooded areas shall be cleared and maintained with undulating edges to avoid a tunnel effect whenever practicable.
- i. Shelterbelts, woodlands, brush, and other low growing shrubs can be cut or trimmed beyond the limitations of this condition upon prior written consent of the landowner and notice to the Commission.
- j. Within 90 days of the completion of the transmission line, CPA-UPA shall furnish the Commission with a log showing areas where trees were cut or trimmed.

5. Where the right-of-way crosses highways and rivers, the clearing shall be done so that a screen of any existing natural vegetation is left in the right-of-way on each side of the road or river. If natural vegetation existed prior to construction and is such that a screen cannot be left, native types of shrubs and low-growing trees shall be planted by CPA-UPA to provide adequate screening.

6. Construction activities shall be performed so as to minimize damages to the natural condition of the area. Construction vehicles shall not travel in the marsh zone of streams and wetlands except during the months of December through March unless adequate measures are taken with Commission approval to protect the marsh biotope.

7. CPA-UPA shall comply with the following conditions in constructing towers and in preparation of tower bases:

- a. Excavation for tower bases will be limited to the foundation holes. Tower base or leg extensions shall be used in lieu of cutting to adjust for tower sites that are not level.
- b. Excavated earth may be spread at the site if topsoil is first removed and segregated for respreading over the excavated material or it may be disposed of elsewhere on the owner's land with his permission.
- c. Any pasture damaged in connection with the erection or maintenance of a tower shall be reclaimed by CPA-UPA. Reclamation shall mean the return to its former level of productivity and may require the planting of either native or tame grasses as chosen by the landowner. Native and tame grass mixtures are specified in subparagraph g.
- d. Where towers are located in crop land, CPA-UPA shall, at their own expense, give the landowner the following options:
 - (1) No treatment to allow farming under the towers.
 - (2) No treatment to allow the landowner to use the base area for disposal of rocks within the tower base.
 - (3) Planting and establishing a growth of tame or native grasses as chosen by the landowner. Native and tame grass mixtures are specified in subparagraph g below.
 - (4) With option (2) above, sterilization of an area of not to exceed 3 feet around the tower base.
- e. As an option to the replanting of grasses, a landowner may elect to have the tower base fenced and planted in shrubs of a type and grade as specified by the North Dakota Farm Forestry Committee and coordinated by the Commission. Species selection shall be subject to approval by CPA-UPA. The shrub plantings must be requested by the landowner within the first growing season after construction is completed on his property.
- f. Where tame grasses are planted under tower bases in crop land, CPA-UPA shall spray the area for weeds until the grass is established.
- g. Tame or native grass mixtures shall be as follows:

(1) Tame grass mixture:

<u>SPECIES</u>	<u>SEEDING RATE, LBS./ACRE</u>
Crested wheatgrass	2
Smooth bromegrass	5
Pubescent wheatgrass*	3
Alfalfa	1-1/2
Sweet clover	1/2
	<hr/>
TOTAL	12

* Slender wheatgrass or intermediate wheatgrass may be substituted.

(2) Native grass mixture:

<u>SPECIES</u>	<u>SEEDING RATE, LBS./ACRE</u>
Western wheatgrass	6
Green needlegrass	4
Pubescent wheatgrass *	1-1/2
Little bluestem **	2
Sideoats grama	3
Alfalfa or Sweet clover	1/2
	<hr/>
TOTAL	17

* Slender wheatgrass may be substituted.

** Prairie sandreed or switchgrass may be substituted. Seed with a minimum of 85% purity and 80% germination should be used. The origin of the native seed should be limited to the Dakotas, eastern Montana, eastern Wyoming, and northern Nebraska.

8. During construction, CPA-UPA shall take appropriate measures to protect livestock and crops.

9. All fences and gates removed or damaged shall be replaced or repaired to not less than their former condition in a manner satisfactory to the landowner. CPA-UPA will install permanent gates in fences crossing the right-of-way as required.

10. Drainage tiles broken or damaged by construction or maintenance of the line shall be repaired or replaced by CPA-UPA in accordance with standard construction specifications, as soon as practicable, or after written notification to CPA-UPA, repaired or replaced by the landowner, with reasonable reimbursement by CPA-UPA.

11. Precautions shall be taken to avoid oil spills and other types of pollution, particularly while performing work in the vicinity of surface water of the state.

12. CPA-UPA shall give the Commission three days notice before commencing construction near Big Muddy Lake, Section 23, Township 140N, Range 72W.

13. All waste shall be removed from the right-of-way and work area. Cleanup shall be continuous throughout construction. Debris subject to scattering by the wind shall be promptly removed. All debris must be disposed of in accordance with applicable ordinances and regulations.

14. The movement of heavy equipment shall be kept to a minimum and confined to as small an area as practicable. Wherever soil compaction, ruts or holes occur, CPA-UPA shall take reasonable measures to restore the land to as near its original condition as possible.

15. Access roads and service roads shall be maintained to prevent soil erosion.

16. Dust control must be performed in accordance with North Dakota State Health Department Regulation R23-25-05.410. (Preventing Particulate Matter from becoming Airborne.)

17. Temporary roads built in connection with line construction must be removed and the road site rehabilitated.

18. Prior to construction of the transmission line CPA-UPA shall give written notice to each landowner and tenant of lands over which the right-of-way passes of its obligations under this permit concerning tree clearing and trimming and tower base reclamation. A landowner's waiver of any of these obligations shall be in writing with a copy furnished to the Commission.

19. CPA-UPA shall give written notice to each owner and tenant of land crossed by the transmission line right-of-way prior to its first entry upon the land for the purpose of clearing right-of-way or building tower foundations. This notice shall state the probable date of first entry and the estimated time for completion of construction on that land and shall give the name, address and telephone number of CPA-UPA's agent to whom inquiries or complaints may be made.

20. CPA-UPA shall, upon completion of construction of the transmission line provide the Commission a set of "as built" drawings.

21. If during construction any grave or historic or paleontological site is discovered, CPA-UPA shall mark and preserve the site and shall promptly notify the Commission. CPA-UPA shall not excavate at such locations unless so authorized by the Commission but may move structure locations along the designated center line to avoid such sites if authorized by the Commission.

22. Construction on rangeland in Stutsman and Kidder Counties shall be limited to the months of August through March to protect the breeding areas of endangered raptor species, unless personnel approved by the Commission to be competent in the identification of raptor nesting locations can assure the Commission that no occupied nesting sites within 1/4 mile of the transmission line centerline would be disturbed.

23. CPA-UPA shall build and attach up to 20 raptor nesting platforms on towers in Stutsman and Kidder Counties in accordance with specifications for design and location furnished by the Zoology Department of North Dakota State University.

D. OPERATION AND MAINTENANCE

1. CPA-UPA shall, on a regular and periodic basis, make available to the Commission copies of summary reports which shall show for the specified period the number of hours the transmission line was in monopolar ground return operation.

2. CPA-UPA shall provide the Commission with reasonable access to their records during regular business hours for the purpose of reviewing the operating data of the transmission line, and upon request shall provide the Commission with specific summarized data.

3. With the approval of the landowner, CPA-UPA shall be responsible for the control of weeds under and immediately adjacent to tower structures. The manner and frequency of application of herbicides shall be restricted to only those herbicides and methods of application approved by the North Dakota Department of Agriculture and the U.S. Environmental Protection Agency. Selective or basal application shall be used when practicable. The herbicide used shall be compatible with the type of crop being grown in the adjacent field.

4. Access roads and service roads shall be maintained to prevent soil erosion.

5. If the operation of the transmission line interferes with radio or television reception, CPA-UPA shall take whatever action is necessary to restore reception to its former level. This obligation shall apply only to equipment existing in the vicinity of the transmission line at the time of its completion and shall expire after five years.

6. If the operation of the transmission line interferes with existing fixed communication systems, CPA-UPA shall take whatever action is necessary to protect against such interference. Inductive coordination studies shall be conducted by CPA-UPA to identify potential problem areas.

7. The ground electrode shall be designed, constructed, and operated in a manner to minimize ground current effects on buried metallic structures.

8. Prior to commencing operation of the transmission line, CPA-UPA, after consultation with the Commission staff, shall submit to the Commission for approval a program for testing and monitoring the effects of the transmission line ground current on private and municipal buried metallic structures. CPA-UPA shall perform potential and current tests to determine the effects, if any, upon individual and municipal underground systems which may result from operation in the monopolar ground return mode, and shall make such modifications or install protective measures as are necessary to protect such systems.

9. Prior to commencing operation of the transmission line, CPA-UPA shall also cooperate with pipeline companies and military installations so that those entities may perform tests to determine the ground currents, if any, resulting from the CPA-UPA dc facility, which might affect their facilities.

10. CPA-UPA shall operate the transmission line in a manner that is compatible with the transmission lines with which it interconnects and shall not operate the transmission line in a manner that would jeopardize the reliability or integrity of transmission line systems operating in the State of North Dakota.

E. GENERAL

1. CPA-UPA shall comply with all state and federal regulations, standards, orders, and permits promulgated or issued pertaining to design, construction, operation, maintenance, use of the right-of-way, and abandonment of the transmission line.

2. This permit is subject to modification by order of the Commission if deemed necessary to further protect the public health or the environment after presentation to the Commission of further significant evidence relating to the effect of direct current transmission lines on the public health or the environment. Before the formal adoption of any such modifications, CPA-UPA shall be afforded notice of the proposed action and a public hearing.

3. This permit is subject to suspension or revocation, and may be suspended or revoked for failure to comply with the conditions of this permit or subsequent modifications or for failure to comply with the applicable statutes, rules, regulations, standards and permits of other state agencies.

4. CPA-UPA shall provide the Commission with a quarterly report describing the following types and numbers of incidents, and whether the matter has been resolved or corrected. These reports shall include:

- a. Incidents involving injury or death to persons, animals and damage to property owned by persons other than CPA-UPA.
- b. Complaints regarding interference with the enjoyment of property or permitted uses of the right-of-way.
- c. Breakdown or failure in the operation of the transmission line.
- d. Complaints of damage to crops or fields during construction, operation or maintenance of the transmission line.

5. Before commencement of construction, CPA-UPA shall give the Commission the name, address, and phone number of the person or persons who will serve as the principal "contact" for the purpose of making inquiry or complaint to CPA-UPA regarding construction, operation and maintenance matters.

6. CPA-UPA shall be responsible for the repair of farm roads and lanes damaged when obtaining access to the right-of-way and for reimbursement to the farm owner or tenant for resulting crop loss.

7. This permit may be suspended or revoked should CPA-UPA lose its authority from the State of Minnesota to construct the Minnesota segment of the transmission line.

8. CPA-UPA shall promptly inform the Commission of any administrative or judicial action that amends or affects the validity or usability of its Construction Permit, Docket No. CU-TR-1 as issued by the State of Minnesota Environmental Quality Council on June 3, 1976, and which authorizes the construction of this transmission line in the State of Minnesota.

CONDITIONS FOR STRUCTURE LOCATIONS

- (A) Structure #17, Plan Profile Sheet 3A, Parcel #DC-MA-14, will be at the N edge of the quarter near Station 277+50.
- (B) Structure #31, Plan Profile Sheet 5A, Parcel #DC-MC-21, will be located at the end of the field on the west edge of the quarter near Station 455+00.
- (C) Structure #225, Plan Profile Sheet 30, Parcel #DC-KA-405, will be located adjacent to the quarter line near Station 3034+50.
- (D) Structure #236, Plan Profile Sheet 32, Parcel #DC-KA-410, will be located on rangeland approximately 200' SW of its present location at Station 3196+00.
- (E) Structure #246, Plan Profile Sheet 33, Parcel #DC-KB-412, will be located on rangeland approximately 170' SSE of its present location at Station 3340+25. Repositioning of structures #244, #245, #247 and #248 will be allowed to accommodate the change.
- (F) Structure #489, Plan Profile Sheet 64, #DC-SH-672, will be located on rangeland between Stations 7121+40 and 7124+00.
- (G) Structure #827, Plan Profile Sheet 108, Parcel #DC-RA-1406, will be located on the quarter line approximately 75' N of its present location at Station 11666+36.55. Repositioning of Structures #821, #822, #823, #824, #825, #826, #828, #829, #830, #831 and #832 will be allowed if necessary to accommodate the change.

DESIGNATED REALIGNMENTS

The proposed route as shown in Exhibit #14 as amended and supplemented by Exhibit #59 shall be realigned as follows. These realignments state the point of exit and reentry from the proposed route. The specific location of the realignment between these points is shown on topographic maps and aerial photos attached to the original permit. Copies of the permit will contain a map showing the general location of these realignments.

1. McLean-Burleigh Realignment.

Exit proposed route at Station 539+85 on 1/2 mile line, Section 7-144-81, McLean County. (Plan and Profile Sheet 6A, Exhibit #14)

Enter proposed route at approximately Station 1873+00, (move P.I. #138 Northwest on bearing S54°25'11"E to 1/2 mile line of Section 30) Section 30-143-77, Burleigh County. (Plan and Profile Sheet 19, Exhibit #14)

2. Kidder County Realignment.

Exit proposed route at structure 300, P.I. #27 at Station 4088+47.67, Section 30-140-71, Kidder County. (Plan and Profile Sheet 40, Exhibit #14)

Enter proposed route at structure 343 at Station 5131+50, Section 16-139-70, Kidder County. (Plan and Profile Sheet 46, Exhibit #14)

3. Sargent County Realignment.

Exit proposed route at approximately Station 11197+40 on the 1/2 mile line, Section 29-132-53, Sargent County. (Plan and Profile Sheet 103, Exhibit #14) Structure 795 may be moved Southeast 200 feet if required to accommodate this turn.

Enter proposed route at structure 808 at Station 11382+22.59, Section 3-131-53, Sargent County. (Plan and Profile Sheet 105, Exhibit #14)

4. Richland County Realignment #I.

Exit proposed route at approximately Station 11934+60 on North-South 1/2 mile line, Section 20-131-51, Richland County. (Plan and Profile Sheet 110, Exhibit #14)

Enter proposed route at approximately Station 12375+45, Section 27-131-50, Richland County. (Plan and Profile Sheet 114, Exhibit #14)

5. Richland County Realignment #II.

Exit proposed route at structure 921 and Station 12930+75, Section 25-130-49, Richland County. (Plan and Profile Sheet 119, Exhibit #14)

Enter proposed route at structure 964 and Station 13518+25, Section 33-129-47, Richland County. (Plan and Profile Sheet 125, Exhibit #14)

Schmidt, Carole GRE-MG

From: Cupit, Bob (PUC) [bob.cupit@state.mn.us]
Sent: Friday, April 27, 2012 11:37 AM
To: Schmidt, Carole GRE-MG
Cc: Eknes, Bret (PUC); DeBleeckere, Tricia (PUC); Kaluzniak, Mike (PUC)
Subject: CU Line Clearance Question

Date: April 27, 2012
To: Carol Schmidt
Great River Energy
Subject: CU Line Clearance Question
Re: 1976 Route Permit

Ms. Schmidt: Following our discussion at our offices on March 29, 2012, and review of the documents you provided, we offer the following unofficial observations.

First, we conclude that the circumstances you have voluntarily brought to our attention can be assessed on the basis of the facts and documentation you have provided without investing significant staff time researching archives, if we could find any from the 1970's. As you know, jurisdiction for electric transmission route permits was transferred to the PUC in 2005 from the MEQB (successor to MEQC).

Secondly, we assume that the permit-issuing authority at the time, the MEQC, properly exercised all jurisdiction applicable at that time associated with addressing compliance of project construction with the permit. Absent evidence that the MEQC was aware of, or concerned about, any compliance issues, we take a reasonable perspective that the MEQC accepted whatever documentation and actions applied to compliance and that were consistent with its authority and discretion at that time. While not a legal opinion, we believe that the as-built project was therefore subject to controlling permit conditions and jurisdiction at that time and can be considered 'grandfathered' from today's standard permit provisions and PUC rules addressing compliance.

We observe that the 1976 permit condition 4.6 prescribing a minimum 50 foot clearance over croplands is likely a land-use related requirement, and associated with intent to specifically reduce potential conflict with agricultural operations that, either at that time or in the future, may involve center-pivot irrigation systems or large farm machinery. Because the determination of which spans this clearance was to be applied was based on land use at that time, without the data from that period, we believe it would be futile to confirm whether the project was constructed in compliance. Further it would be illogical to consider today's land use as a basis for assessing compliance.

We note further that the current clearances shown in the survey analyses are compliant with today's National Electric Safety Code, which is the standard typically applied by the Commission in all current transmission line route permits. We're not aware that the subject condition has been applied to any other project permit. We also note the very small proportion of span clearances (relative to the presumably many hundreds of spans comprising the built line) that were evidenced in your recent survey as less than 50 feet, and make the observation that at the time of construction there appears to have been a good-faith effort to achieve the prescribed clearance on the total project.

Additionally, GRE has informed our staff that, to its knowledge, there have been no documented complaints of non-compliance with this condition, relating to conflicts of the built project with land uses.

Though neither PUC staff, nor GRE staff, have conducted a detailed analysis of the cost of bringing the reported spans into compliance, PUC staff engineers assume that such cost would be substantial. As suggested by the facts and assumption discussed above, we conclude that the benefits of making the likely required investment do not justify such a commitment at this time.

It is our staff opinion, however, that in the event that an aggrieved landowner files a formal complaint and submits evidence that non-compliance has a direct substantial effect upon cultivated farming operations, and that the impacted parcel was cropland when the project was constructed, GRE should report the complaint to the Commission and both GRE and the Commission, formally if necessary, would address the complaint under standard complaint procedures applied to permits issued today.

Of course, GRE has the option of officially petitioning the Commission to either amend the permit under current rules in MR 7850.4900 or make a determination of whether the circumstances are a violation of the permit and require 'corrective or ameliorative measures' as prescribed in MR 7850.5100.

If you have additional questions about this matter, please contact Bret Eknes of Commission staff.

Bob Cupit
Manager, Energy Facilities Permitting
Minnesota Public Utilities Commission
651-201-2255