

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF SOUTH DAKOTA

IN THE MATTER OF THE APPLICATION OF NEBRASKA PUBLIC POWER DISTRICT FOR A PERMIT TO CONSTRUCT AND OPERATE THE PROPOSED MANDAN 500 KV TRANSMISSION FACILITY.)
FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION AND ORDER DENYING PERMIT (F-3871)

SUMMARY OF DECISION

The South Dakota Public Utilities Commission hereby denies the application of Nebraska Public Power District (NPPD) for a permit to construct and operate the proposed MANDAN 500 kv transmission facility on the grounds that NPPD has failed to prove, as required under SDCL 49-41B-22(5) that the proposed transmission facility will be consistent with the public convenience and necessity in any area or areas which will receive electrical service, either direct or indirect, from the facility, regardless of the state or states in which such area or areas are located.

PROCEDURAL HISTORY

On January 14, 1981 NPPD filed its application for a permit to construct and operate the proposed MANDAN nominal 500 kv, AC, single-circuit electric transmission facility, pursuant to SDCL 49-41B and ARSD 20:10-22.

Pursuant to SDCL 49-41B-15 and 16, and in accordance with the Order dated February 11, 1981 the Commission held public input hearings in this case in Yankton, South Dakota on March 9, 1981, in Freeman and Alexandria, South Dakota on March 10, 1981, in Artesian and Erousta, South Dakota on March 11, 1981, in Clark and Pierpont, South Dakota on March 12, 1981, and in Britton, South Dakota on March 13, 1981.

Pursuant to SDCL 49-41B-21 and SDCL Chapter 34A-9, an Environmental Impact Statement (EIS) was prepared by Engineering Science. A draft EIS was filed on September 4, 1981 and circulated among appropriate agencies pursuant to SDCL 34A-9-6. By Order dated July 16, 1981, the Commission ordered public hearings on the draft EIS, which were held in Yankton and Alexandria, South Dakota on September 16, 1981, in Clark, South Dakota on September 17, 1981, and in Britton, South Dakota on September 18, 1981.

Luebs' calculations of the effects of compaction, and the extent of mitigation required to restore soil productivity, is based on the faulty premise that only the heaviest two vehicles are responsible for the total extent of soil compaction. The fallacy in Dr. Luebs' analysis was exposed by Dr. Claude Fly, a certified professional agronomist and life member of the American Society of Agronomy (Fly, TR 1696). Dr. Fly criticized Dr. Luebs' analysis and concluded that the heaviest vehicles do not necessarily cause the most compaction. Although pounds per square inch (pressure) is an important factor to consider in assessing the impact of soil compaction, trucks and smaller pickups can additionally compact soil even after larger vehicles have passed over the area. Dr. Fly concluded that construction site pickups can in fact create the most severe compaction problem on a construction site (Fly, TR 1775). Dr. Luebs' assumptions were also refuted by the testimony of Staff Witness Burggraf who described severe compaction and soil mixing problems caused by smaller construction vehicles (Burggraf, TR 1846) and a serious compaction that can occur by dynamic compaction from vibrating stationary machines, including tensioners and pullers (Burggraf, TR 1870-1871). The Commission therefore finds that the conclusions of Dr. Luebs, i.e., that soil compaction will not be significant at depths below 24 inches, that natural freezing and thawing and biotic activity will naturally return soils to pre-compaction levels, that subsoiling and more intensive surface tillage would be the most effective means of reducing the effects of compaction on crop yields, and Dr. Luebs' very conservative estimates on the extent of crop loss 2 to 3 years after construction as a result of soil compaction, will not be given great weight by this Commission in determining the extent of the impact of soil compaction, and the appropriate mitigation measures which would be required to restore soil productivity.

The separation of topsoil from subsoil to a maximum depth of 18 inches in construction areas where heavy vehicular traffic will occur, i.e., the 30 foot construction path within the right-of-way, the pooling sites, the laydown areas, foundation excavation sites and major temporary access roads; the stockpiling of such separated topsoil on an undisturbed portion of the right-of-way, and the utilization of a subsoiler tool capable of penetrating to a minimum depth of 20 inches over the entire working area prior to replacement of any stockpiled topsoil, would most effectively mitigate the potential damage to soils described in Finding of Fact 25, Supra (Burggraf-Direct, Staff 2, 17-19; Final EIS, Misc. 5, 7-1; Fly-Direct, Staff 1, 36; Fly, TR 1804-1806)

The separation of topsoil described in Finding of Fact 27, supra, would present a potential for wind and water erosion, and therefore, appropriate precautions should be employed where necessary to control excessive erosion of stockpiled topsoil (Luebs-Rebuttal, NPPD 9, 3).

The continued viability of soils disturbed during the transmission facility construction process is of tantamount importance to the landowners in the siting area, therefore, segregation and stockpiling of topsoil in accordance with Findings of Fact 27 and 28, supra, should be undertaken only after reasonable effort has been made to obtain the advice and consent of affected landowners (Fly TR 1806, 1810, 1819; Burggraf, TR 1846; Schafer, TR 348). Therefore, in the event that a permit to construct the MANDAN line were granted, the Commission would impose as a condition of construction a landowner consent provision consistent with its position in in the Matter of the Application of Northern Border Pipeline Company for a Permit to Construct a Natural Gas Pipeline (F-3364) and in the Matter of the Application of Northern States Power Company for a Construction Permit for Two 345 Kv Transmission Lines from the Western Area Power Administration 345 Kv Transmission Line to the Spillrock Substation (F-3349). NPPD would be required as a condition of construction to send written notice to each affected landowner as soon as practicable after issuance of a permit. The written notification of topsoil treatment options would be on a form to be approved by the South Dakota Public Utilities Commission, and would set forth specific landowner options with regard to separation and stockpiling of topsoil. The landowner would be given an opportunity to specify other specific procedures he wished to have employed on his particular land in regard to topsoil preservation. In the event that a landowner did not respond within ten (10) days after presentation of the option form, the procedures outlined in Findings of Fact 27 and 28, above, would automatically go into effect.

A typical MANDAN tower site will require the excavation of up to approximately 20 cubic yards or 540 cubic feet of soil and excavation spoil (Merrill-Rebuttal, NPPD 11, 3). Included in the excavated materials may be boulders, gravel, cobble, rock or acidic or other highly undesirable spoil material (Fly Direct, Staff 1, 25), which could render the soil less productive or adversely affect cultivation and plant growth.

NPPD's application in this docket is denied.

It is therefore

ORDERED, that the application of Nebraska Public Power District for a permit to construct and operate the proposed MANDAN nominal 500 kv AC transmission facility be, and the same hereby is, DENIED; and it is

FURTHER ORDERED, that the application of Nebraska Public Power District be, and the same hereby is, incorporated in this Order by reference as if fully set forth herein.

Dated at Pierre, South Dakota, this 14th day of January, 1982.

BY ORDER OF THE COMMISSION,
Chairman Fischer, Commissioners
Stoffershn and Salem

Patricia de Hueck
PATRICIA DE HUECK
Executive Secretary

(OFFICIAL SEAL)