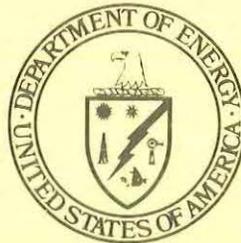


**FINAL
ENVIRONMENTAL IMPACT STATEMENT**

**Western Area Power
Administration**

**Miles City—New Underwood
230-Kv Electrical Transmission Line**

**Montana, North Dakota,
and South Dakota**



**FILE
COPY**

July 1979

U.S. DEPARTMENT OF ENERGY

**FINAL
ENVIRONMENTAL IMPACT STATEMENT**

**Western Area Power
Administration**

**Miles City – New Underwood
230-Kv Electrical Transmission Line**

**Montana, North Dakota,
and South Dakota**



July 1979

U.S. DEPARTMENT OF ENERGY

Washington, D.C. 20545

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SUMMARY

() Draft (X) Final Environmental Statement

Department of Energy, Western Area Power Administration, Billings Office

1. Type of Action: (X) Administrative () Legislative
2. Brief description of action:

Construction of a proposed 528-kilometer (328-mile), 230-kV transmission line between Miles City and Baker, Montana, Hettinger, North Dakota, and New Underwood, South Dakota, in Custer and Fallon Counties in Montana, Adams, Bowman, and Slope Counties in North Dakota and Meade, Pennington, and Perkins Counties in South Dakota. Wood-pole, H-frame structures with three conductors and two overhead static wires are planned. Initiation of field construction is scheduled for the spring of 1980 with completion scheduled late in 1981.

"The Rural Electrification Administration (REA) has participated in the preparation of this EIS, to fulfill the NEPA requirements for guaranteeing REA loan funds for the Basin Electric Power Cooperative portion of this project and REA intends to use this EIS for its compliance with NEPA". (In this project the REA is a Cooperating Agency, No. USDA - REA - EIS (ADM) 79-4-F.)

3. Summary of environmental impact and adverse environmental effects:

The transmission line would be introduced to a ranch and farm landscape and would be visible from several highways including Interstate 94 in the immediate vicinity of Miles City Substation and from Interstate 90 for a distance of about 1.6 kilometers (1 mile) east of New Underwood. At most, 35 hectares (86 acres) of agricultural and pastureland would be required for structures, guys, and line terminal facilities. The line would cross the Little Missouri River, which has been designated as a Scenic River by the State of North Dakota, and the segment north of Marmarth is currently being considered as a potential addition to the National Wild and Scenic Rivers System by the Secretaries of Agriculture and Interior. There would be minor loss of bird life as a result of collision with the structures or conductors. Some disturbance of the landscape and loss of agricultural production would occur during construction of the line.

4. Alternatives considered:

- A. Nonconstruction of transmission line
- B. Buried cable
- C. Alternate terminal point at South Dakota end of line
- D. Other potential alternate routes

5. List of entities from whom comments have been requested or received with responders indicated by "*" :

See attached distribution list.

6. Date draft statement made available to Environmental Protection Agency (EPA) and the public:

Draft statement: August 31, 1978 (DOE/EIS - 0025-D)

Final statement:

LIST OF ENTITIES FROM WHOM COMMENTS HAVE BEEN REQUESTED OR
RECEIVED WITH RESPONDENTS INDICATED BY "*"

- * Advisory Council on Historic Preservation
- * Department of Agriculture, Rural Electrification Administration
- Department of Commerce
- Department of Health, Education, and Welfare
- * Department of Housing and Urban Development
- * Department of Interior
 - Bureau of Indian Affairs
 - Bureau of Land Management
 - Bureau of Mines
 - Fish and Wildlife Service
 - Geological Survey
 - Heritage, Conservation, and Recreation Service
- Department of Transportation
- Environmental Protection Agency
- Federal Energy Regulatory Commission
- Department of Agriculture
- * Forest Supervisor, Forest Service, Billings, Montana
- Staff Assistant for North Dakota,
United States Forest Service,
Bismarck, North Dakota
- State Conservationist, Soil Conservation Service,
Bismarck, North Dakota, * Bozeman, Montana, and Huron, South Dakota
- * Department of Health, Education, and Welfare
- Regional Director, U.S. Public Health Service,
Denver, Colorado
- Department of Interior
- Area Director, Bureau of Indian Affairs
Aberdeen, South Dakota
- State Director, Bureau of Land Management,
Billings, Montana
- District Manager, Bureau of Land Management, Miles City, Montana,
and Dickinson, North Dakota
- * Chief, Intermountain Field Operation Center, Bureau of Mines,
Denver, Colorado
- Regional Director, U.S. Fish and Wildlife Service,
Denver, Colorado
- Area Manager, U.S. Fish and Wildlife Service, Billings, Montana,
Bismarck, North Dakota, and Pierre, South Dakota
- Area Mining Supervisor, Geological Survey,
Billings, Montana
- Liaison Officer, Bureau of Mines,
Bismarck, North Dakota, Helena, Montana, and Rapid City, South Dakota
- District Engineer, Geological Survey,
Billings, Montana

LIST OF ENTITIES FROM WHOM COMMENTS HAVE BEEN REQUESTED OR
RECEIVED WITH RESPONDENTS INDICATED BY "*"
(cont.)

- Regional Director, Heritage, Conservation, and Recreation Service,
Denver, Colorado
Field Representative, Missouri Basin Region,
Denver, Colorado
Missouri River Basin Planning Officer,
Denver, Colorado
Department of Transportation
* Regional Director, Federal Aviation Administration,
Aurora, Colorado
* Federal Energy Regulatory Commission,
Chicago, Illinois
* Chairman, Missouri River Basin Commission, Omaha, Nebraska
Governor of Montana, Helena, Montana
Office of Budget and Program Planning, Helena, Montana (Clearinghouse)
Department of Community Affairs (Clearinghouse)
* Montana Bureau of Mines and Geology
Montana Department of Game, Fish and Parks
Montana Department of Health and Environmental Sciences
Montana Department of Highways
Montana Department of Natural Resources and Conservation
Montana Environmental Quality Council
* State Historic Preservation Officer
County Commissioners, Custer and Fallon Counties
Chairman, County Planning Commission, Custer and Fallon Counties
Mayor, Cities of Baker and Miles City
Governor of North Dakota, Bismarck, North Dakota
* North Dakota State Planning Division, Bismarck, North Dakota
(Clearinghouse)
* Roosevelt-Custer Regional Council (Metropolitan-Regional Clearinghouse)
Attorney General's Office
Natural Resources Coordinator
Natural Resources Council
North Dakota Department of Agriculture
* North Dakota Game and Fish Department
North Dakota Geological Survey
North Dakota Health Department
* North Dakota State Highway Department
North Dakota Land Department
* North Dakota Parks and Recreation Department
North Dakota Soil Conservation Committee
* North Dakota State Historical Society
North Dakota Water Commission
Office of Energy Management

LIST OF ENTITIES FROM WHOM COMMENTS HAVE BEEN REQUESTED OR
RECEIVED WITH RESPONDENTS INDICATED BY "*"
(cont.)

- * Public Service Commission of North Dakota
 - State Forester (North Dakota)
 - State Geologist (North Dakota)
 - County Commissioners, Adams, Bowman, and Slope Counties
 - Chairman, County Planning Commission, Adams and Slope Counties
 - Mayor, Cities of Bowman and Hettinger
 - Governor of South Dakota, Pierre, South Dakota
- * South Dakota State Planning Bureau (Clearinghouse)
 - Fifth Planning and Development District
 - (Metropolitan - Regional Clearinghouse)
 - Sixth Planning and Development District
 - (Metropolitan - Regional Clearinghouse)
 - Public Utilities Commission,
 - State of South Dakota
 - South Dakota Aeronautics Commission
 - South Dakota Archaeological Commission
 - South Dakota Department of Environmental Protection
 - South Dakota Department of Natural Resource Development
 - South Dakota Department of Transportation
 - South Dakota Department of Wildlife, Parks, and Forestry
 - State Liaison Officer (South Dakota) - Historic Preservation
 - County Commissioners, Meade,
 - Pennington, and Perkins Counties
 - Chairman, County Planning Commission,
- * Meade, Pennington, and Perkins Counties
 - Badlands Environmental Association,
 - Dickinson, North Dakota
 - Black Hills Audubon Society,
 - Rapid City, South Dakota
 - Cheyenne River Sioux Tribal Council,
 - Eagle Butte, South Dakota
 - Dakota Environmental Council,
 - Vermillion, South Dakota
 - Institute of Ecological Studies,
 - Grand Forks, North Dakota
 - Montana Audubon Society, Bozeman, Montana
 - Montana Environmental Library, Missoula, Montana
 - Montana Wildlife Federation, Missoula, Montana
 - National Audubon Society, New York, New York
 - North Dakota Audubon Society
 - Jamestown, North Dakota
 - North Dakota Chapter, The Wildlife Society,
 - Upham, North Dakota

LIST OF ENTITIES FROM WHOM COMMENTS HAVE BEEN REQUESTED OR
RECEIVED WITH RESPONDENTS INDICATED BY "*"
(cont.)

North Dakota Wildlife Federation
Bismarck, North Dakota
South Dakota Chapter, The Wildlife Society,
Mobridge, South Dakota
South Dakota Wildlife Federation,
Sioux Falls, South Dakota
Basin Electric Power Cooperative,
Bismarck, North Dakota
Montana-Dakota Utilities Co.
Bismarck, North Dakota
MAPP Coordination Center,
Minneapolis, Minnesota
Northern Plains Resource Council,
Billings, Montana
United Plainsmen,
Dunn Center, North Dakota
Tom Eggenesperger, Baker, Montana
* Christian Spies, Syracuse, New York
* Richard Lane Hogan, D.D.S., Miles City, Montana
* Ralph L. Forman, Miles City, Montana
* James R. Bundy, Miles City, Montana

* Comments received and attached.

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APPENDIX A

The Appendix contains copies of letters of comments received by the Western Area Power Administration from Federal, regional, State, and local entities on the draft environmental statement and Western Area Power Administration Responses.

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FINAL ENVIRONMENTAL STATEMENT

Miles City-Baker-Hettinger-New Underwood 230-kv Transmission Line

Prepared by Department of Energy
Western Area Power Administration
Billings Area Office

A. DESCRIPTION OF THE PROPOSAL

1. Introduction

a. Purpose

The Western Area Power Administration proposes to participate in joint construction of a 230-kv transmission line which has a distance of about 528 kilometers (328 miles) from Miles City, Montana, to New Underwood, South Dakota, plus terminal facilities as a part of the Transmission Division of the Pick-Sloan Missouri Basin Program. The Pick-Sloan Missouri Basin Program was authorized for construction by the Act of Congress approved December 22, 1944 (58 Stat. 887), and acts amendatory thereof or supplementary thereto. Montana-Dakota Utilities Co. would construct the North Dakota portion of the line and the Western Area Power Administration would construct the portion in Montana and South Dakota. The Basin Electric Power Cooperative share of the project would involve an advance of funds to obtain rights for 25 percent of the line capacity. The Rural Electrification Administration has participated in the preparation of this document to fulfill the NEPA requirements for guaranteeing REA loan funds for the Basin Electric Power Cooperative portion of this project and REA intends to use this EIS for its compliance with NEPA.

The need for the proposed line was identified and^{1/} recommended in the Miles City-New Underwood Transmission Study. This study was a joint effort of the Western Area Power Administration, Basin Electric Power Cooperative, and Montana-Dakota Utilities Co.; it was conducted to examine transmission requirements in the eastern Montana, western North Dakota, and western South Dakota areas. The study indicated a strong need for additional high-voltage transmission in these areas to improve system stability, to improve reliability of service to existing area loads, and to provide capacity for future load growth in the area. Load growth in the service area is expected to be from increased utilization of, or conversion to, electrical equipment and electrical home heating, rather than increasing population. The study concludes that the proposed Miles City-New Underwood 230-kv line would be the optimum solution for all area problems.

^{1/} Western Area Power Administration, Basin Electric Power Cooperative and Montana-Dakota Utilities Co. Miles City-New Underwood Transmission Study, May 1978.

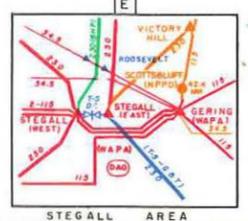
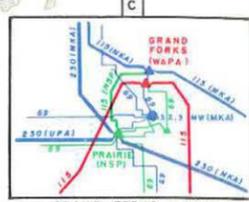
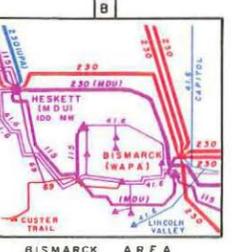
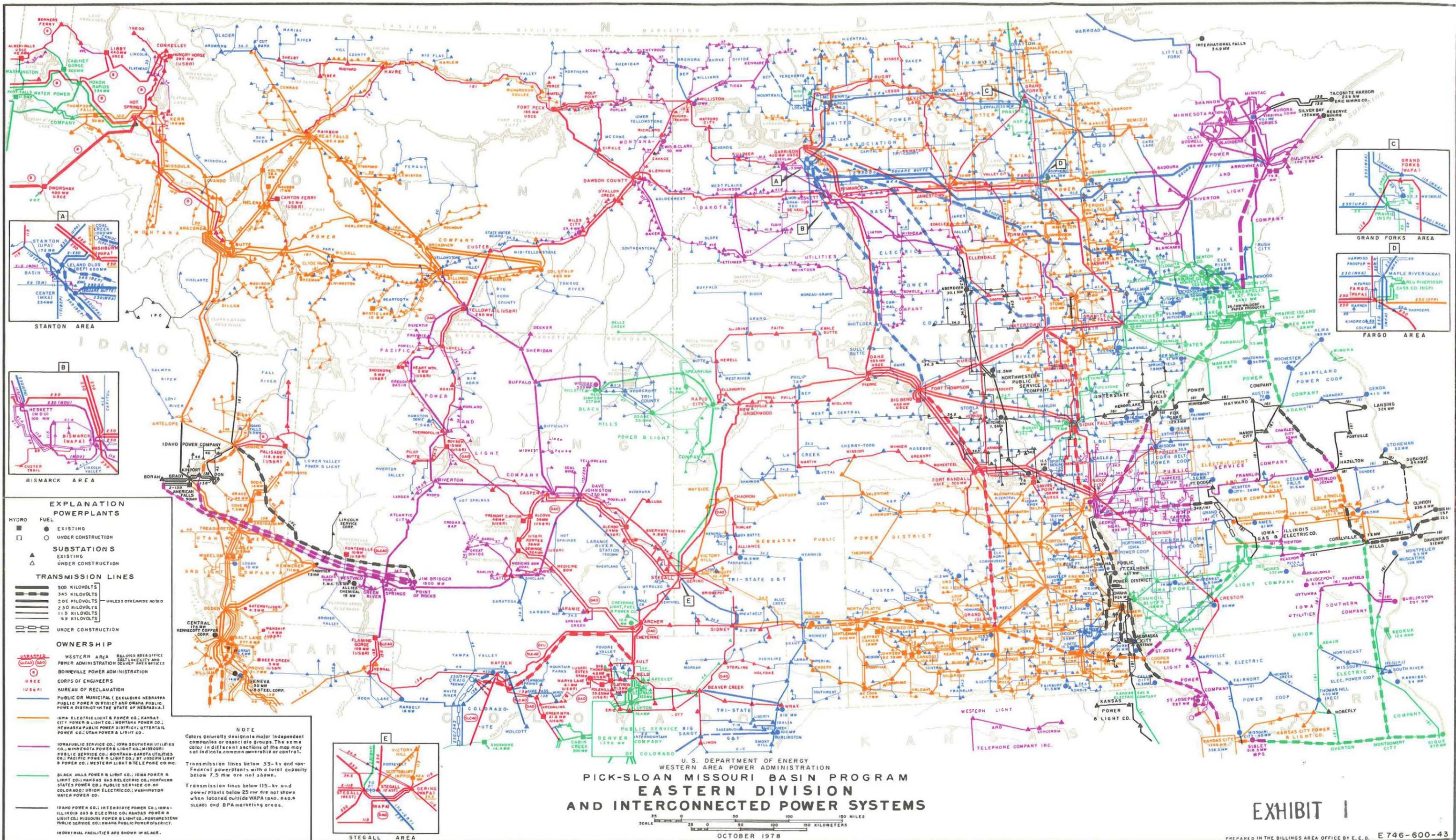
The Miles City-New Underwood Transmission Study was presented to the Mid-Continent Area Reliability Coordination Agreement (MARCA) Design Review Committee at a meeting in Minneapolis on June 13, 1978. Coordination with other power supply entities was through MARCA. The technical aspects of the studies were approved by the Design Review Committee. See Chapter B, Section 8, for further discussion on MARCA reliability criteria.

The line would be part of a transmission system which delivers electric power and energy from existing powerplants in the Montana-North Dakota area. There are no new thermal generating stations or major energy using facilities associated with this transmission project. Exhibit I shows details of the existing interconnected systems. Due to technical difficulties, the transmission systems in the eastern Montana area are not physically connected with the west transmission system. This split in operation was effected in 1970 after a brief period of integrated operation.

The Miles City-New Underwood 230-kv transmission line and associated substation additions at Miles City, Baker, Bowman, Bison, and New Underwood would provide a number of benefits to the transmission system. It would greatly improve system performance and reliability to the loads served from planned interconnections with the new line. At the present time, the electrical loads in the Miles City, Baker, and Hettinger areas have radial, high-voltage 115-kv lines as their primary source of supply. Bowman area loads have subtransmission service from either Baker or Hettinger. Power is delivered to Bison area loads over a radial subtransmission line from the Maurine 115/69-kv substation. The new Miles City-New Underwood transmission line would interconnect with the existing high-voltage line serving each of the above areas to provide looped service to the area with a resultant increase in system reliability, transmission capacity, and voltage support. The new line would also improve operations on the existing high-voltage transmission system between eastern Montana and western North Dakota by providing a second 230-kv transmission line to back up the existing Dawson County-Dickinson-Heskett 230-kv line. At the present time, the sudden loss of a section of the Dawson County-Dickinson-Heskett 230-kv line can cause severe voltage and frequency deviations in the eastern Montana and western North Dakota areas. See Chapter B, Section 8, for further discussion on system disturbances. The addition of the Miles City-New Underwood 230-kv line would alleviate this problem. By providing an alternate high-voltage path into western South Dakota, the new line will also substantially increase the transfer capability on existing north-south transmission lines between the two Dakotas.

b. Location

The line would be located in Custer and Fallon Counties in southeastern Montana; Slope, Bowman, and Adams Counties in southwestern North Dakota; and Perkins, Meade, and Pennington Counties in



- EXPLANATION**
- POWERPLANTS**
- EXISTING
 - UNDER CONSTRUCTION
- SUBSTATIONS**
- EXISTING
 - △ UNDER CONSTRUCTION
- TRANSMISSION LINES**
- 300 KILOVOLTS
 - 345 KILOVOLTS
 - 500 KILOVOLTS
 - 230 KILOVOLTS
 - 115 KILOVOLTS
 - 69 KILOVOLTS
 - UNDER CONSTRUCTION
- OWNERSHIP**
- WESTERN AREA BALANCE AREA OFFICE
 - POWER ADMINISTRATION
 - SALT LAKE CITY AND DENVER AREA OFFICES
 - BONNEVILLE POWER ADMINISTRATION
 - CORPS OF ENGINEERS
 - BUREAU OF RECLAMATION
 - PUBLIC OR MUNICIPAL (EXCLUDING NEBRASKA PUBLIC POWER DISTRICT AND IOWA PUBLIC POWER DISTRICT IN THE STATE OF NEBRASKA)
 - IOWA ELECTRIC LIGHT & POWER CO.; KANSAS CITY POWER & LIGHT CO.; MONTANA POWER CO.; NEBRASKA PUBLIC POWER DISTRICT; OREGON ELECTRIC POWER CO.; UTAH POWER & LIGHT CO.
 - IOWA PUBLIC SERVICE CO.; IOWA SOUTHERN UTILITIES CO.; MINNESOTA POWER & LIGHT CO.; MISSOURI PUBLIC SERVICE CO.; MONTANA-BORATA UTILITIES CO.; PACIFIC POWER & LIGHT CO.; ST. JOSEPH LIGHT & POWER CO.; WESTERN LIGHT & TELEPHONE CO.
 - BLACK HILLS POWER & LIGHT CO.; IOWA POWER & LIGHT CO.; KANSAS GAS ELECTRIC CO.; NORTHERN STATES POWER CO.; PUBLIC SERVICE CO. OF COLORADO; UNION ELECTRIC CO.; WASHINGTON WATER POWER CO.
 - IOWA POWER CO.; INTERSTATE POWER CO.; IOWA-ILLINOIS GAS & ELECTRIC CO.; KANSAS POWER & LIGHT CO.; MISSOURI POWER & LIGHT CO.; NORTHERN PUBLIC SERVICE CO.; OHAMA PUBLIC POWER DISTRICT.
 - INDUSTRIAL FACILITIES ARE SHOWN IN BLACK.

NOTE

Colors generally designate major independent companies or associate groups. The same color in different sections of the map may not indicate common ownership or control.

Transmission lines below 33-kv and non-Federal powerplants with a total capacity below 7.5 mw are not shown.

Transmission lines below 115-kv and power plants below 25 mw are not shown when located outside W.A.P.A. (B.A. or S.C.A.) and B.P.A. marketing areas.

U.S. DEPARTMENT OF ENERGY
 WESTERN AREA POWER ADMINISTRATION
PICK-SLOAN MISSOURI BASIN PROGRAM
EASTERN DIVISION
AND INTERCONNECTED POWER SYSTEMS



OCTOBER 1978

EXHIBIT I

northwestern South Dakota. It would begin near the existing Western Area Power Administration Miles City Substation and traverse 150 kilometers (93 miles) in Montana, 137 kilometers (85 miles) in North Dakota, and 241 kilometers (150 miles) in South Dakota to the existing 230-kv New Underwood Substation. A map of the proposed study area is included as Exhibits II-A and II-B. The proposed transmission line is being located within the boundaries of the proposed study area. Exhibit III shows the details of the Federal power system within the Missouri River Basin.

c. Structures

Wood-pole, H-frame structures, with two overhead ground wires (typical supporting structure shown on Exhibit IV) have been selected for construction of the 230-kv transmission line. The wood-pole structures would be located about 213 meters (700 feet) apart on a right-of-way easement 32 meters (105 feet) wide for 213 meters (700 feet) spans and wider for longer spans and at line turning angles where side guying is required. Montana-Dakota Utilities Co. structures and span lengths would be similar, but their right-of-way easement would be 30.5 meters (100 feet) wide. For 230-kv transmission lines, wood suspension structures range in height between 17 meters (56 feet) and 23 meters (74 feet), with the top of a typical structure about 20 meters (65 feet) above the ground.

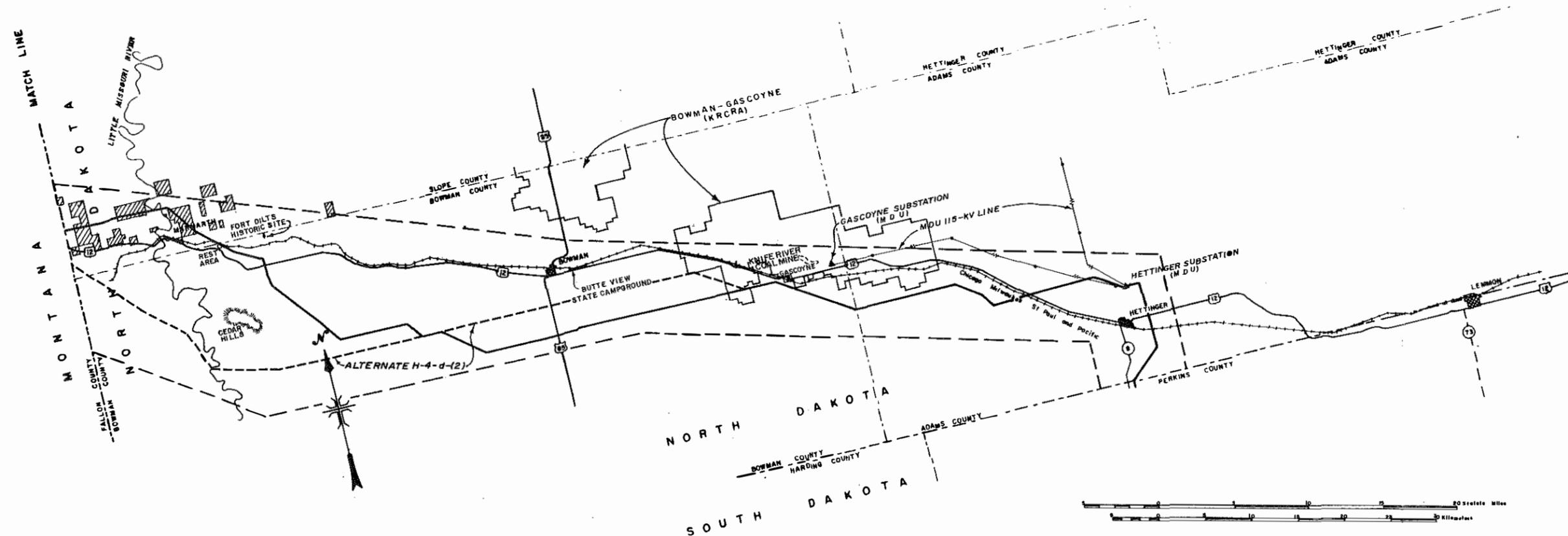
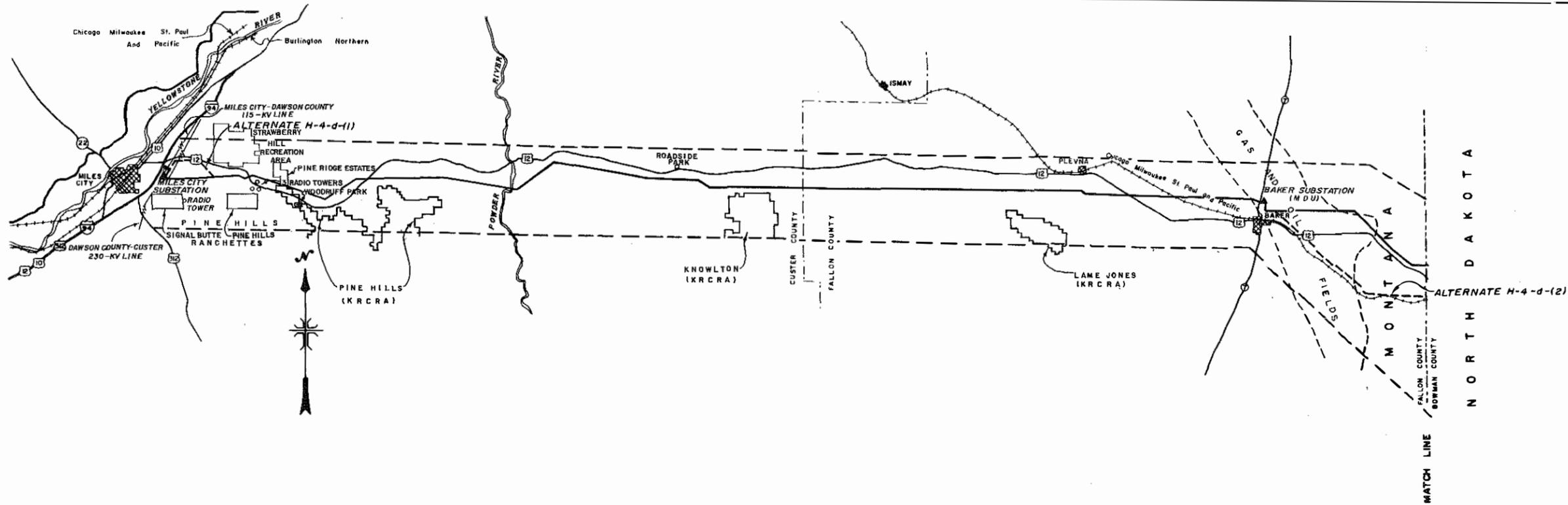
Guying structures will be required to limit cascading failures that can result from a broken conductor or loss of a single structure under severe icing conditions. At 3.2- to 4.8-kilometer (2- to 3-mile) intervals, structures would have line guys installed each way. The line guys are to a single anchor on centerline. At 11.3- to 16.1-kilometer (7- to 10-mile) intervals, guyed deadend structures are put in the line. At railroad and major highway crossings, "line guys back" will be installed on the structures. At line deflection angles, either angle guys or line guys plus angle guys are installed in combinations depending on degree of angle.

d. Line Routing

The impacts of alternative routes are described in the chapter of alternatives.

The transmission line was planned using a "corridor" or study area concept. The corridor is approximately 9.7 kilometers (6 miles) wide and is a general route selected prior to exact location surveys. This procedure allows preliminary planning to proceed ahead of final route selection. The corridor generally follows U.S. Highway 12 from Miles City, Montana, to Hettinger, North Dakota. Near Hettinger, the corridor turns and goes almost straight south to New Underwood, South Dakota.





- EXPLANATION**
- PROPOSED CORRIDOR
 - PROPOSED 230-KV TRANSMISSION LINE
 - ALTERNATE ROUTE
 -  LITTLE MISSOURI NATIONAL GRASS LANDS
 -  KNOWN RECOVERABLE COAL RESOURCE AREA

EXHIBIT II-A

ALWAYS THINK SAFETY

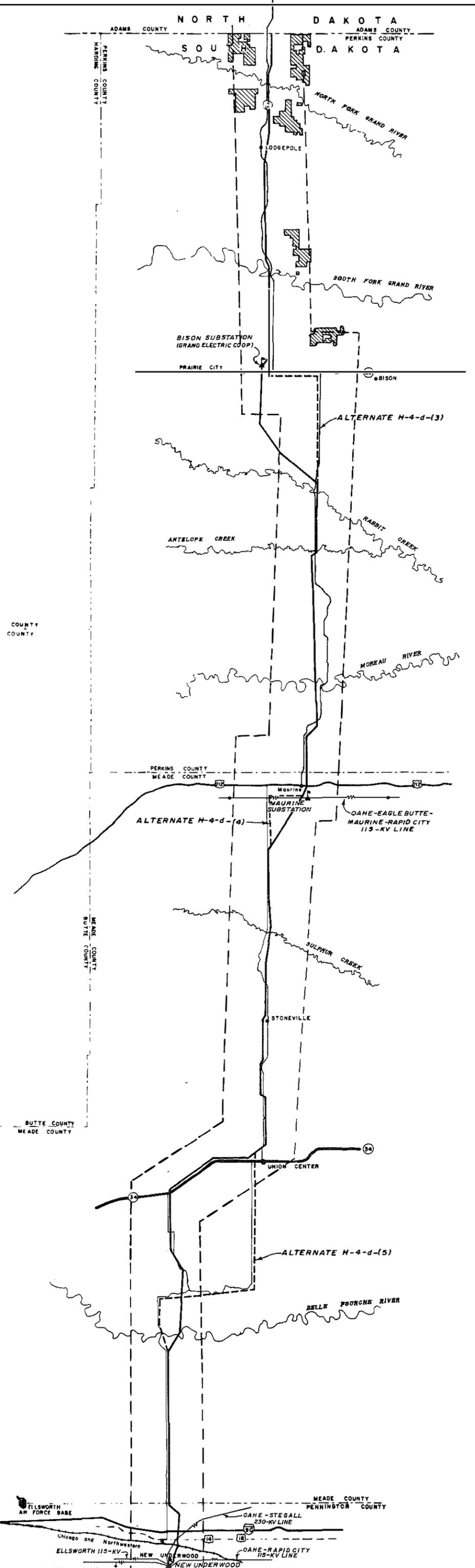
UNITED STATES
DEPARTMENT OF ENERGY
WESTERN AREA POWER ADMINISTRATION

**MILES CITY-BAKER-HETTINGER-NEW UNDERWOOD
230 KV TRANSMISSION LINE
LOCATION MAP**

DESIGNED G.A.J. TECHNICAL APPROVAL _____
 DRAWN R.D.M. SUBMITTED _____
 CHECKED _____ ADMIN. APPROVED _____

HURON, SOUTH DAKOTA JANUARY 20, 1978 **466-602-4908**





- EXPLANATION**
- PROPOSED CORRIDOR
 - PROPOSED 230-KV TRANSMISSION LINE
 - - - ALTERNATE ROUTE
 - ▨ GRAND RIVER NATIONAL GRASSLANDS

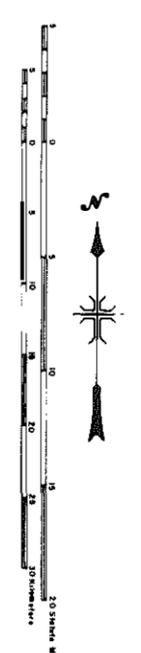


EXHIBIT II-B

PLANNED THINK SAFETY
 UNITED STATES
 DEPARTMENT OF ENERGY
 WESTERN AREA POWER ADMINISTRATION

MILES CITY-BAKER-HETTINGER-NEW UNDERWOOD
 230 KV TRANSMISSION LINE
 LOCATION MAP

DESIGNED: G.A.J. TECHNICAL APPROVAL:
 DRAWN: R.D.H. SUBMITTED:
 CHECKED: ADMIN. APPROVED:

HURON, SOUTH DAKOTA JANUARY 30, 1978 466-602-4909

EXISTING AND POTENTIAL
PLANTS, FEDERALLY OWNED

MISSOURI RIVER BASIN POWER SYSTEMS

NAME PLATE RATING IN MW

MONTANA

1	Allenspur	250
2	Canyon Ferry	50
3	Fort Peck	165
4	Yellowtail	250

WYOMING

1	Alcova	36
2	Bold Ridge	23
3	Boysen	15
4	Fremont Canyon	48
5	Glendo	24
6	Guernsey	4.8
7	Heart Mountain	5
8	Hunter Mountain	14.4
9	Kortas	36
10	Seminole	32.4
11	Sheridan	25
12	Shoshone	6
13	Sunlight	15
14	Thief Creek	125

COLORADO

1	Big Thompson	4.5
2	Estes	45
3	Flatiron	71.5
4	Green Mountain	21.6
5	Morys Lake	8.1
6	Polehill	33.25

NORTH DAKOTA

1	Garrison	400
---	----------	-----

SOUTH DAKOTA

1	Big Bend	468
2	Fort Randall	320
3	Gavins Point	100
4	Oahe	595

GENERATING PLANTS

EXISTING & UNDER CONSTRUCTION POTENTIAL PLANT SITES

BUREAU OF RECLAMATION



U. S. ARMY ENGINEERS



TRANSMISSION LINES

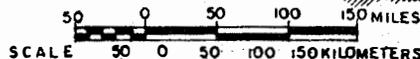
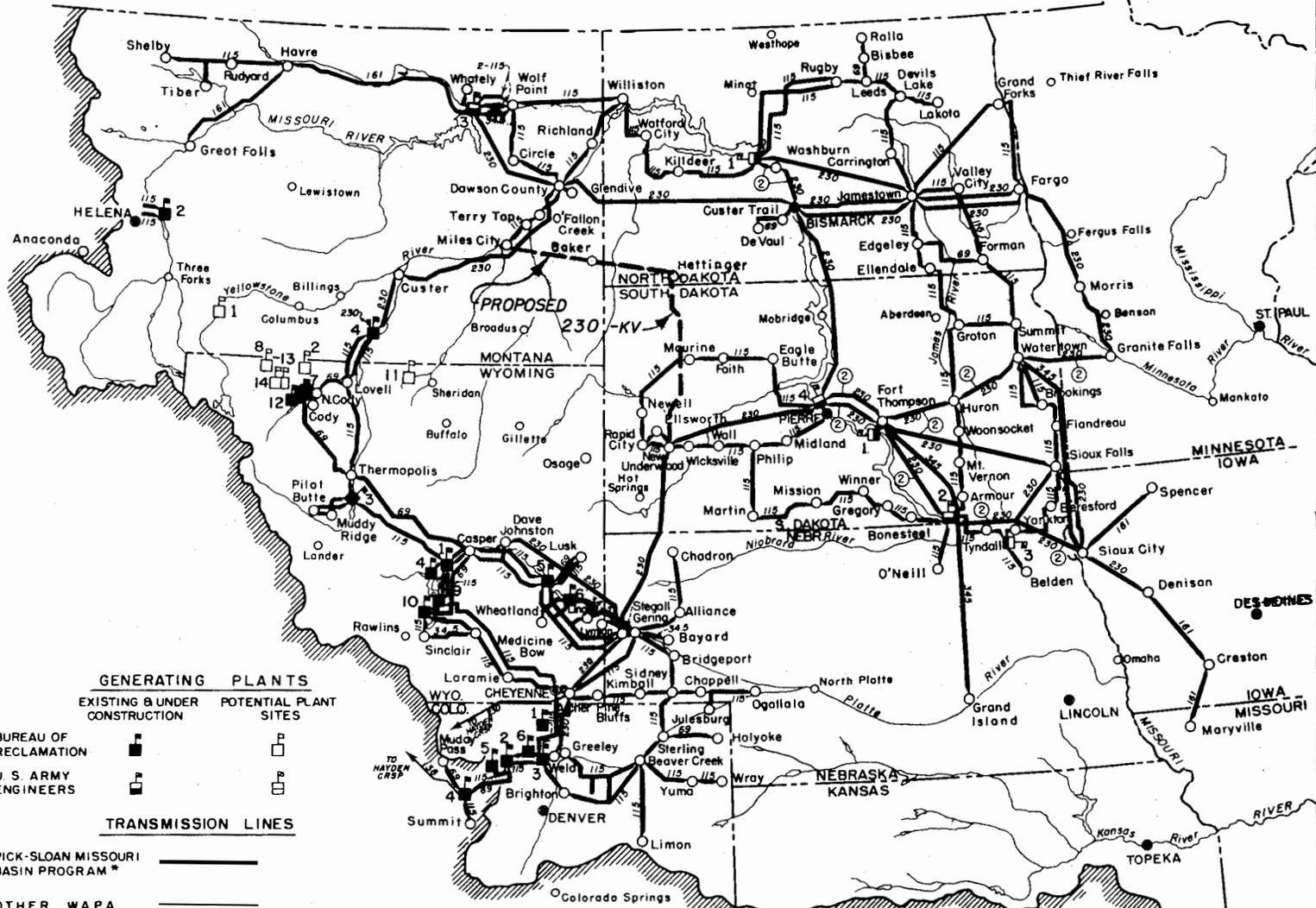
PICK-SLOAN MISSOURI BASIN PROGRAM*



OTHER WAPA



DOUBLE CIRCUIT LINES



UNITED STATES
DEPARTMENT OF ENERGY
WESTERN AREA POWER ADMINISTRATION

EXHIBIT III

* Includes facilities of the Pick-Sloan Missouri Basin Program and the Integrated Projects (Fort Peck, Colorado-Big Thompson, Kendrick, North Platte, and Shoshone)

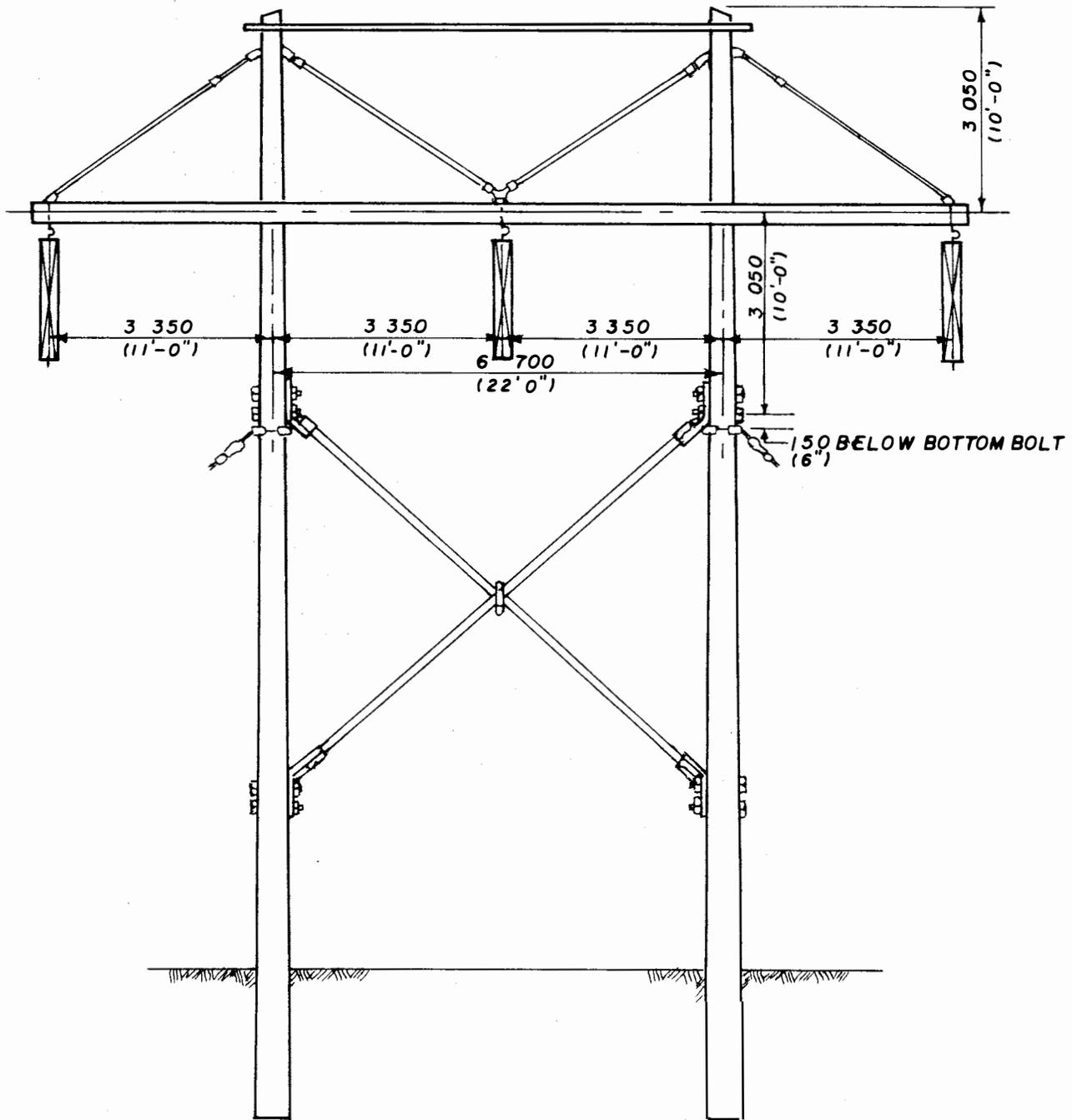


Exhibit IV

**NOTE: RIGHT-OF-WAY REQUIRED
= 32 METERS (105 FEET)
ALL DIMENSIONS ARE IN
MILLIMETERS UNLESS
OTHERWISE STATED.**

**TRANSMISSION LINES
TYPE HSB 230-KV
TYPICAL SUSPENSION STRUCTURE**

Within the corridor (study area) a centerline of the transmission line is being selected based on minimizing road construction with its attendant environmental damage, avoiding cultivated land and farmsteads, historic and archaeological sites, important fish and wildlife habitat, airports and public recreation areas, and minimizing aesthetic impacts and the amount of tree clearing required. The centerline routing is flexible within design constraints and, as sensitive areas are identified, it should be possible to avoid them by shift in structure locations or of the right-of-way. The centerline selection and final structure spotting is presently underway through the combined engineering effort of aerial photography and land survey and is expected to be completed in December 1979 with award of the construction contract by March 1980.

Beginning at Miles City, the line goes generally east approximately 129 kilometers (80 miles) to Baker. Presently, both the Western Area Power Administration and Montana-Dakota Utilities Co. have substations across the road from each other adjacent to Interstate 94 near the east side of Miles City. The existing Miles City Substation is also bounded on the north by a proposed Tongue River Electric Cooperative substation. The transmission line will start at a new substation to be constructed adjacent to, and interconnecting with the existing Western Area Power Administration Miles City Substation. The existing Miles City Substation right-of-way will be expanded to provide space for the new substation; however, the new 230/115-kv yard will be in a separate fenced area. The Custer-Dawson County 230-kv line which will be tapped for this terminal is located 175 meters (575 feet) east of the existing substation and the two substations are also separated by an established drainage ditch.

Within the study area about 12.9 kilometers (8 miles) east of Miles City, a recreation area is being developed on Federal land near Strawberry Hill by the Bureau of Land Management. It will be several years before the recreation area is fully developed. About 1.6 kilometers (1 mile) south of Strawberry Hill there are three radio towers by the highway. Three real estate subdivisions are also located in the study area within 19.3 kilometers (12 miles) from Miles City. The subdivisions are Signal Butte Ranchettes, Pine Hills Ranchettes, and Pine Ridge Estates and are shown on Exhibit II-A. The Strawberry Hill Recreation Area and the established subdivisions are located far enough apart so that the transmission line would avoid all of these developments; however, the line would cross two sections of land which the landowner advised were purchased for subdivision (see page A-56).

About 19.3 kilometers (12 miles) east of Miles City, Woodruff Park (a campground) is located about 0.4 kilometer ($\frac{1}{4}$ mile) south of the highway. The Pine Hills area east of Miles City is traversed by the line. The Powder River is also crossed by the line. About 19.3 kilometers (12 miles) east of the Powder River crossing, the

state has a roadside park (rest area) by the highway. The town of Plevna is also within the study area. The line continues to the east until it reaches Baker, Montana.

The transmission line will serve a new substation 230-kv yard to be constructed east of and adjacent to Montana-Dakota Utilities Co.'s existing substation 1.6 kilometers (1 mile) north and 0.8 kilometer ($\frac{1}{2}$ mile) east of Baker. The existing substation fenced area will be expanded to provide space for the new 230-kv facilities.

From Baker the line goes generally southeast approximately 142 kilometers (88 miles) to Hettinger, North Dakota. East of Baker the line traverses the Pennel, Lookout Butte, and Fertile Prairie Oil Fields. The line continues on the diagonal and enters the State of North Dakota. Within the study area in Slope County there are scattered parcels of the Little Missouri National Grasslands. The main body of the Grasslands is to the north. The town of Marmarth lies within the study area in Slope County. In the North Dakota badlands area, the Little Missouri River is traversed by the line. This river has been designated by the State of North Dakota as a Scenic River; however, a river crossing cannot be avoided. The segment of the Little Missouri River north of Marmarth has been identified by the Secretaries of the Interior and Agriculture as a potential addition to the National Wild and Scenic Rivers System. See Chapter C, Section 3, for further discussion on the Little Missouri National Grasslands and the Little Missouri River. See also the response to the Department of Interior's letter dated December 12, 1978, on page A-18.

About 6.4 kilometers (4 miles) southeast of Marmarth, is another roadside park (rest area). The Fort Dilts State Historic Site (State designation) is about 4.8 kilometers (3 miles) east of the rest area. The Cedar Hills are about 4.8 kilometers (3 miles) south of the highway. At Bowman, North Dakota, a new substation is planned which will be located 6.4 kilometers (4 miles) south of town. The transmission line will interconnect with this new substation. The Butte View State Campground is located about 1.6 kilometers (1 mile) east of Bowman.

The Knife River Mining Company has an existing coal mine east of the town of Gascoyne, North Dakota, on the north side of U.S. Highway 12. The company has future plans to expand their strip mine operation. The line continues generally on the diagonal to Hettinger. A new substation will be constructed 1.6 kilometers (1 mile) east and 3.2 kilometers (2 miles) north of Hettinger, adjacent to Montana-Dakota Utilities Co.'s existing substation. The transmission line will serve the substations at both Bowman and Hettinger.

From Hettinger the line runs generally in a north-south direction for the remaining distance of about 257 kilometers (160 miles) to New Underwood, South Dakota. The line turns to the east and west at various locations to take advantage of existing

county and state roads. From Hettinger the line passes to the east of Hettinger and eventually aligns with State Highway 8 to the South Dakota border where the road becomes State Highway 75 and continues on into South Dakota. In Perkins County, the line follows an existing opening between areas of the Grand River National Grasslands. The larger part of the Grasslands is to the east and west of State Highway 75. The North Fork of the Grand River and the South Fork of the Grand River are traversed by the line. Grand Electric Cooperative plans to tap the proposed 230-kv transmission line near their existing substation 16 kilometers (10 miles) west of Bison, South Dakota. Near Highway 20 the line continues south for approximately 8.0 kilometers (5 miles) and then turns southeast on a diagonal for about 11.0 kilometers (7 miles) until the line again aligns with Highway 75.

From the Rabbit Creek crossing south to U.S. Highway 212, the line crosses Antelope Creek and the Moreau River. The line would pass near the Western Area Power Administration's Maurine Substation to allow an intertie at some future date. In the Maurine area, the line turns southwest for about 10.0 kilometers (6 miles). Sulphur Creek is within the study area between U.S. Highway 212 and Highway 34. The town of Stoneville is also within the study area.

Near Highway 34, the line goes on a diagonal to the southwest for about 12.9 kilometers (8 miles) to align with the New Underwood Substation. The line again continues to the south and crosses the Belle Fourche River. Near New Underwood, South Dakota, the line crosses Interstate 90. This crossing would be at about 90 degrees. The transmission line would terminate at the existing Western Area Power Administration's New Underwood Substation located about 3.2 kilometers (2 miles) south of the town of New Underwood.

e. Construction Schedule

Preliminary design work is currently underway with initiation of field construction tentatively scheduled for the spring of 1980 following award of contracts for the line and terminal facilities at Miles City and New Underwood. Completion late in 1981 would provide operational availability over the peak winter load period. Intermediate substations at Baker, Bowman, Hettinger, and Bison would be furnished by others.

During the entire 2-year field construction period, there would be construction activity somewhere along the alignment, within the right-of-way. Line construction is done on a sequential basis by a series of small crews working along the length of the line.

Initial survey control, route centerline location, profile surveys, and access surveys will be active for about 1 year prior to the start of construction.

The contractor's first activities will be the installation of gates, construction of access approaches, and clearing of right-of-way.

Material storage yards would then be selected for conductor and pole storage when unloading from railroad cars. Possible material storage yards would be located at Miles City, Plevna and Baker, Montana; Marmarth, Bowman and Hettinger, North Dakota; and at New Underwood, South Dakota.

Gates to access trails are normally kept closed until in use, and unlocked unless locks are requested by landowners.

Later, materials will be delivered to the structure sites - poles, "X" braces, crossarms, insulators, and hardware. This will be closely followed by the framing crews who assemble the structures at individual structure sites.

Auger crews and equipment will be closely followed by erection equipment and backfill crews.

Considerable time may pass before the stringing operation follows. Large reels of conductor and overhead ground wire will be delivered to preselected sites at 3- to 5-kilometer (2- to 3-mile) intervals.

The wire pulling, sagging, and clipping operations follow each other in rapid succession. Tension stringing methods will be utilized to install the conductors and overhead ground wires. Steel pulling cables will be pulled downline and placed in large pulleys hanging from the insulator strings attached to crossarms. The pulling cables are used to pull the conductor through the structures under tension for the entire length between the preselected cable delivery sites. Therefore, the heavy pulling and tension equipment need not be set up at any intermediate locations. Approximately 3 kilometers (10,000 feet) of conductor would be installed each pull, and 2 to 3 pulls could be completed each week.

The last operation involves many phases of cleanup (i.e., aerial, trash, ground), access approach removal; and gate and fence repair.

During construction it is anticipated the work force would consist of crews and equipment used in approximately the order listed:

Tree clearing - 3-4 persons, bucket truck, pickup truck
Gates - 2-3 persons, 1½ ton truck
Auger - 4 persons, 2 trailers with auger, 2 pickup trucks

Material haul-out - 5 persons. hydro-crane.
5th wheel tractor with flatbed
trailer
Framing - 4-6 persons, hydro-crane, 1½-ton truck,
pickup truck
Erection - 6-8 persons, crane, air compressor, pickup
trucks
Stringing - 15-25 persons, reel trailer, tensioner,
puller, pickup trucks, digger, Hi-reach,
caterpillar with winch, winch truck
Cleanup - 3 persons, 1½-ton truck

Areas disturbed during construction would be revegetated
consistent with present land use.

f. Related Activities Associated with the Project

Intermediate substations at Baker and Hettinger will be
expanded by Montana-Dakota Utilities Co. The new Bowman Substation
will be constructed by Upper Missouri G&T Electric Cooperative.

Grand Electric Cooperative will construct the new Bison
Substation. The Western Area Power Administration will provide the
terminal facilities at Miles City and New Underwood Substations.

The layout for the substations to be expanded and the
new substations will include buswork, switchgear, lightning arresters,
power transformers, and power circuit breakers. Each substation will
contain a control building to house control boards and the d.c. power
supply. Some electrical equipment contains insulating oils which are
composed of mineral oil, a petroleum based product. All equipment and
steel supports will have concrete foundations. The substation yards
will be covered with crushed rock or compacted gravel and enclosed by
a chain link fence.

g. Operation and Maintenance

Trees which have grown enough to endanger operation of the
line are trimmed or topped. Branches are chipped and made available
to the landowners for fertilizer or hauled to the local landfill for
disposal. Herbicides may be used in the substation yards, and occas-
ionally on the transmission line right-of-way. Herbicides used by the
Western Area Power Administration (WAPA) and Montana-Dakota Utilities Co.
(MDU) are those registered with the Environmental Protection Agency in
compliance with the Federal Pesticide Control Act of 1972 and other
Federal pesticide acts. Application of herbicides with Atrazine as an
active ingredient to prevent undesirable plant growth is the primary
weed control measure at the WAPA power facilities in Montana, North Dakota,
and South Dakota. Application of herbicides with Bromacil as an active
ingredient is the primary weed control measure at MDU substation facilities
in North Dakota. The herbicides are in pellet form and are distributed

by hand spreaders, or in a liquid or wettable powder form. Substation yards are treated on an annual, or biannual basis, depending on weed growth. The application rate for Atraton 80W (a wettable powder), for instance, according to label instructions, varies from 2.7 to 22.7 kilograms (6 to 50 pounds) per 0.4 hectare (1 acre) depending on weed species and it is applied during the summer months. It is expected that herbicides would be applied on an annual, or biannual basis, to the 7 hectares (17 acres) used for substation space. The Montana portion of the line may have herbicides used at the structures to prevent undesirable weed growth. The application interval would be on a three-year interval. For the North Dakota segment of the line, MDU does not use herbicides on the transmission line; however, at the request of the landowner, the Co. will provide a herbicide for application at structures by the landowners. For the South Dakota segment of the line, WAPA does not use herbicides at line structures unless requested by the landowner. Vegetation may be mowed to minimize the fire hazard and to enhance the appearance of the areas around power installations.

Access for construction and maintenance of the line would be via existing roads, farm access roads or farm trails, and new access trails where needed. A graded permanent access road is not planned for this line. It is estimated that a minimum of 80 kilometers (50 miles) of off- right-of-way access trails would be needed for this transmission line, and most of this length is needed for the Montana segment of the line.

Each year every fifth 1.6 kilometers (mile) of line is inspected and hardware and bolts tightened where necessary. A turn-around time of 5 years is required for complete maintenance for wood-pole lines. On the average, six aerial patrols are flown each year to check for damaged insulators or structures.

Substation operation and maintenance consists of weekly or biweekly checks of substation equipment, such as oil levels of electrical equipment, breaker and compressor operations, relay targets, substation battery conditions, yard conditions, etc.

h. Siting Process by the State of North Dakota

The portion of the transmission line that is being constructed in North Dakota will be built by Montana-Dakota Utilities Co. (MDU). MDU has made an application to the North Dakota Public Service Commission (PSC) for a Certificate of Corridor Compatibility, in order to meet the requirements set forth in the North Dakota Energy Conversion and Transmission Facility Siting Act of 1975, as amended in 1977.

The PSC of North Dakota conducted public hearings for the MDU transmission line corridor application. The hearings were held at Bowman, North Dakota, on March 6, 1979. This was a consolidated hearing for the three North Dakota counties traversed by the line. About 30 people were in attendance at the meeting. Presentations for the corridor were made by Montana-Dakota Utilities Co. and the Western Area Power Administration. The District Forest Ranger from Dickinson, North Dakota, testified in favor of the corridor concept, also in regard to the location of the corridor. No one appeared to be in opposition to the transmission line corridor.

About 30 days after the public hearing, the PSC issues a Certificate of Corridor Compatibility if they find that the corridor is acceptable. MDU next submits a Route Permit Application. About 30 days after the route permit has been declared complete, the PSC reschedules public hearings on the route permit. About 30 days after this public hearing, the PSC issues a Route Permit if they find that the route is acceptable. With issuance of the Route Permit, the MDU portion of the line is then authorized for construction.

B. DESCRIPTION OF THE ENVIRONMENT

1. Climate

The proposed transmission line would be located in a semiarid area. Climatic data for Miles City, Bowman, and Rapid City are shown in the following tables:

Climatic Data - Miles City, Montana ^{2/}
(39 years of record - 1976)

Precipitation -centimeters Average	Temperature Average July	(degrees C) Average January	Average Annual Frost-Free Period Days
35.36 (13.92 in.)	23.6 (74.4 ^o F.)	-9.2 (15.4 ^o F.)	147

Climatic Data - Bowman, North Dakota ^{3/}
(62 years of record - 1976)

Precipitation -centimeters Average	Temperature Average July	(degrees C) Average January	Average Annual Frost-Free Period Days
38.91 (15.32 in.)	21.1 (69.9 ^o F.)	-9.9 (14.1 ^o F.)	119

Climatic Data - Rapid City, South Dakota ^{4/}
(89 years of record - 1976)

Precipitation -centimeters Annual	Temperature Average July	(degrees C) Average January	Average Annual Frost-Free Period Days
43.48 (17.12 in.)	22.6 (72.6 ^o F.)	-5.6 (21.9 ^o F.)	145

The Bowman weather station is about 64 kilometers (40 miles) west of Hettinger, North Dakota, and the Rapid City

^{2/} U.S. Department of Commerce, Climatology Data - Montana Annual Summary, 79(13), 1976.

^{3/} U.S. Department of Commerce, Climatology Data - North Dakota Annual Summary, 85(13), 1976.

^{4/} U.S. Department of Commerce, Climatology Data - South Dakota Annual Summary, 81(13), 1976.

weather station is about 40 kilometers (25 miles) west of New Underwood, South Dakota.

The area is subject to severe winter storms with high winds, cold, and blizzard conditions during the months of December, January, February, and March. Winds in excess of 80 kilometers (50 miles) per hour occur regularly in the area. Warm weather during April sometimes causes rapid melting of snows which results in minor flooding problems. Heavy icing conditions occasionally damage power and telephone circuits. The area is also subject to tornadoes. At Miles City a maximum high temperature of 43 degrees C. (110 degrees F.) occurred in August 1949, while the lowest temperature on record at Miles City was registered at -38 degrees C. (-37 degrees F.) in both February 1939 and in January 1957.

Historical meteorological data are not readily available which would identify the specific areas which have received storm damage in the past. Most recently, in February 1978, the area was subject to a severe winter storm. In Montana, 18 counties, including Custer and Fallon Counties, were affected. Helicopter-equipped Montana National Guard troops were called into the area after a winter disaster proclamation by the Governor. In North Dakota, the Governor issued a disaster declaration for nine counties in the southwestern part of the state. In South Dakota, the Governor designated five counties, including Meade and Perkins Counties, for emergency assistance. National Guard troops in both states were on standby for emergency calls from local officials. The following information is applicable for the general area in which the proposed transmission line is to be located:

Light to moderate ice storms - one or less every year
Large heavy damaging ice storms - two per 10-year period
Tornado incidence - 54 387 square kilometers (21,000 square mile) area - two per year

2. Geology, Soils, Ground Water, and Minerals

The line traverses the Coal Province and Cretaceous Table Lands of the Great Plains Physiographic Province. Materials in this region consist of generally soft, weakly cemented shales, and sandstones. Locally, the rock is moderately to firmly cemented and often forms caprock for small buttes.

The transmission line is located in a minor seismic risk area. There have been no known earthquake epicenters near the transmission line route, although earthquakes have been felt from other locations in the region.

The general area traversed by the line contains 14 major soil associations: Havre-Wanetta-Cherry, Bainville-Midway, Bainville-

Tullock-Fort Collins, Lismas-Pierre, and Chama-Bainville in Montana; Badlands-Bainville, Morton-Rhodes, Bainville-Morton, Rhodes-Morton, Morton, and Vebar in North Dakota; and Morton-Bainville, Morton, Vebar-Flasher, and Pierre-Kyle in South Dakota. The Badlands, Havre, and Vebar soil associations are susceptible to wind erosion, the Bainville, Flasher, Fort Collins, Lismas and Midway soils are susceptible to both wind and water erosion, and the remaining soils have some degree of susceptibility to water erosion.

There are ground-water aquifers along the transmission line route. Small alluvial aquifers exist along the floodplains of some of the larger streams. Bedrock aquifers of unknown extent exist under part of the area. Domestic and stock water is being used from these sources. The aquifers are not of sufficient size, do not have potential yield, or do not have water of suitable quality for irrigation except for possibly some very localized areas.

The known mineral resources along the transmission line route consist of coal (lignite), gas and oil, and sand and gravel. The route traverses three known coal reserve areas between Miles City and Baker, Montana. The coalfields are the Pine Hills, Lane Jones, and Knowlton "Known Recoverable Coal Resource Area" (KRCRA) as designated by the U.S. Geological Survey. The location of these coalfields within the study area are as shown on Exhibit II-A. Development of these reserves has not been attempted to date. Development at a later date is virtually a certainty. There are no coal-fired generating units either committed or proposed for development in this area that we are aware of at the present time. Data on these coalfields are as follows:

<u>Deposit</u>	<u>Coal bed</u>	<u>Reserves x10⁶ tons</u>	<u>Acreage</u>	<u>Tons</u>			<u>BTU</u>
				<u>Per Acre</u>	<u>Ash</u>	<u>Sulfur</u>	
Pine Hills	Dominy	193.87	6,022	32,191	7.2	0.53	7,293
Knowlton	Dominy (M&L)	747.51	19,613	38,112	7.1	0.41	6,710
	Dominy (U)	120.31	4,448	27,048	5.6	0.38	6,645
Lane Jones	Dominy	150.00	10,593	14,160	---	---	6,020

Coal is presently being stripmined northeast of the town of Gascoyne, North Dakota, from the Bowman-Gascoyne KRCRA. It is unlikely that mining activities will extend to the south since the data reviewed indicated that the thicker and economically strippable reserves were generally north of U.S. Highway 12 and the railroad which passes through the towns of Gascoyne and Scranton. Reserves for the Bowman-Gascoyne KRCRA, on a per-township basis, can be obtained from Bulletin No. 775 from the U.S. Geological Survey. Development of any large scale coal mining in South Dakota is unlikely due to thinness of beds, thickness of overburden, and the limited amount of known reserves. Any mining of coal in South Dakota will be of limited local importance only. The majority of the South Dakota coal reserves are west of the proposed transmission line route.

In areas where the Fort Union Formation, particularly the Tongue River Member, is exposed or under the surface, there is the possibility that coal is present.

At the present, limited uranium exploration is being conducted in the vicinity of southwestern North Dakota. The uranium reserves, if any, are unknown at present. There are no known uranium mining operations in the area.

Extensive gas and oil development has taken place and continues in the vicinity of Baker, Montana, and extends into western North Dakota. Some exploration continues, particularly in western North Dakota. The transmission line route will traverse this oil field. Exhibit V shows the gas and oil fields within the transmission line corridor.

Scattered sand and gravel deposits are found in the vicinity of the transmission line. Development of these deposits has not been noted within the proposed route. The extent of the deposits is not known.

3. Topography

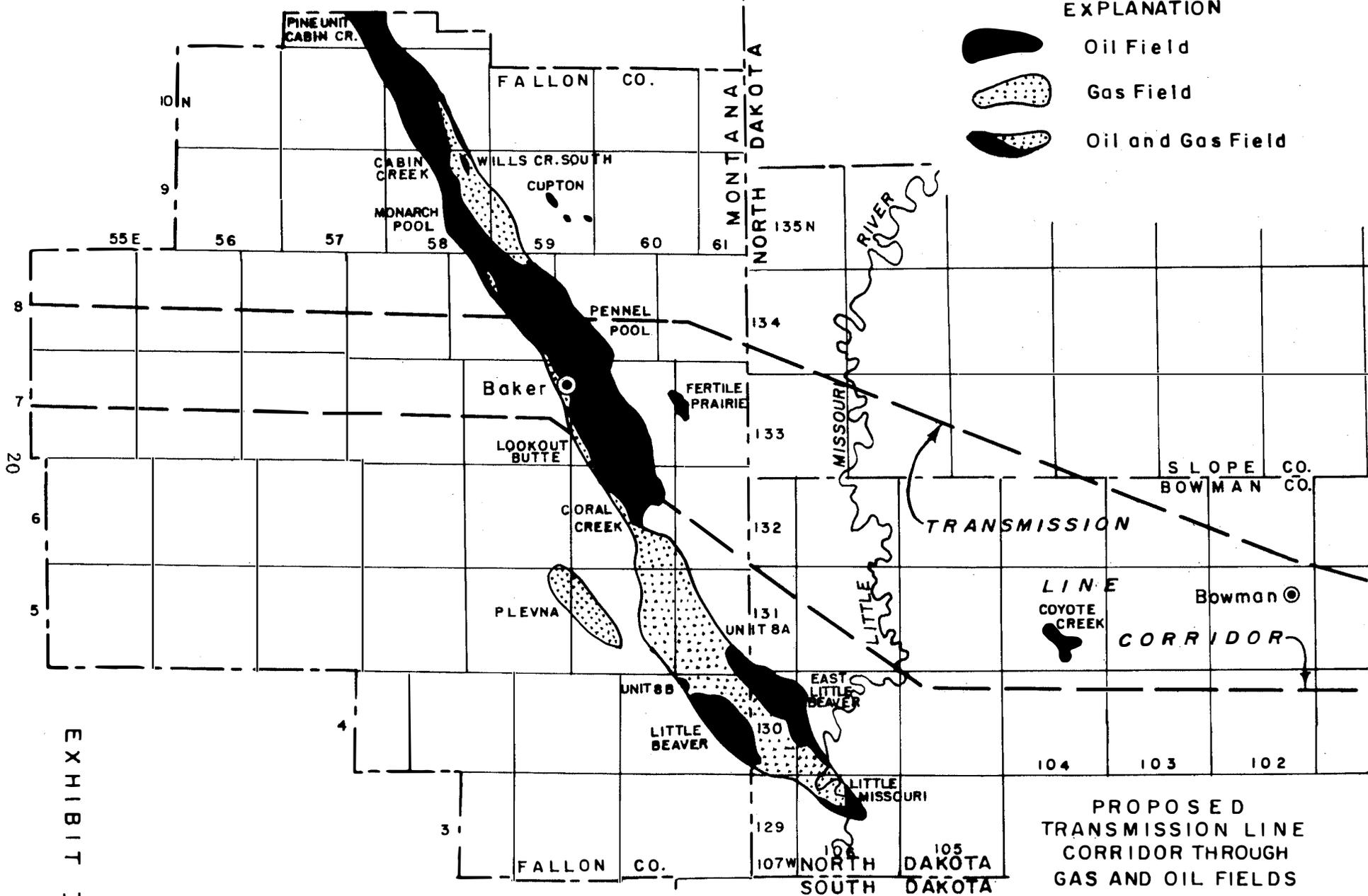
The area between Miles City, Montana, and Bowman, North Dakota, varies in elevation from about 731.5 meters (2,400 feet) m.s.l. at both Miles City and the Powder River crossing to a peak elevation of 993.0 meters (3,258 feet) m.s.l. about 56 kilometers (35 miles) east of Miles City. The area has badland features and contains numerous hills. It is intersected by the Powder River and O'Fallon Creek cross drainage of the Yellowstone River and the Little Missouri River cross drainage of the Missouri River. The elevation at Baker, Montana, is 905.6 meters (2,971 feet) m.s.l. and it is 901.6 meters (2,958 feet) m.s.l. at Bowman.

From Bowman eastward to Hettinger, North Dakota, then south to New Underwood, South Dakota, the proposed line traverses low undulating hills and level countryside with numerous cross drainages of the Missouri River or its tributaries. The major cross drainages crossed by the line are the North Fork and the South Fork of the Grand River, the Moreau River, and the Belle Fourche River. The elevation at Hettinger is 824.5 meters (2,705 feet) m.s.l. and it is about 884.8 meters (2,903 feet) m.s.l. at New Underwood Substation.

4. Vegetation

The line route crosses three of the potential natural vegetative communities described by Kuchler ^{5/}. Near Miles City the

^{5/} Kuchler, A.W., Potential Natural Vegetation of Conterminous United States, American Geographical Society Special Publication No. 36, 1964.



EXPLANATION

-  Oil Field
-  Gas Field
-  Oil and Gas Field

EXHIBIT V

PROPOSED
TRANSMISSION LINE
CORRIDOR THROUGH
GAS AND OIL FIELDS
IN CEDAR CREEK ANTICLINE

first 9.7 kilometers (6 miles) are characterized by rather short, open to fairly dense grass dominated by western wheatgrass, blue grama, and needle-and-thread grass. Ponderosa pine joins these species for the next 22.5 kilometers (14 miles) through broken hilly terrain to create the eastern ponderosa forest. Along the route pine groves are medium dense to open (60 percent crown cover for the first 9.7 kilometers (6 miles) of pine cover, 20 percent for the remainder) with a fairly open ground cover of grasses. The scattered groves of timber are not extensive enough to support a lumbering industry. The moderately dense, short wheat grass-needle grass community dominated by western wheatgrass, blue grama, needle-and-thread grass, and green needle-grass is found along most of the rest of the route except where the prairie has been converted to farmland.

Isolated cottonwoods occur along streambanks, particularly the Powder River in Montana and the Belle Fourche River in South Dakota. Sage and rabbit brush are fairly common. Wild rose, snowberry, and buffaloberry regularly occur where there is sufficient moisture in intermittent stream valleys or depressions. The only other trees along the route are those planted in shelter-belts around farmsteads and fields to protect them from the wind. The belts are typically linear, 30 meters (100 feet) or less wide, and up to 0.8 kilometer (half a mile) long. They are usually composed of rows of shrubs, conifers, and deciduous trees such as Chinese elm, green ash, poplar, and cottonwood.

No plants characterized as threatened or endangered by the Department of the Interior (50 CFR 17.12) occur in the area, however, the State of North Dakota has listed some plant species found within the area as rare and unique species.

5. Fish and Wildlife

Streams crossed by the proposed transmission line generally provide poor fish habitat with the exception of the Little Missouri River which has been classified by the U.S. Fish and Wildlife Service as being a highest valued fishery resource. ^{6/} They are ordinarily alkaline, 1 meter (3 feet) or less deep, often intermittent, and lack bank cover. The Powder River, near Miles City, is typical of the prairie streams being silt laden, and subject to erratic fluctuations in flow with much of its substrate constantly shifting as bedload. The river develops only shallow pools and lacks aquatic vegetation. The extreme turbidity severely reduces primary productivity due to lack of light penetration, resulting in low numbers of aquatic invertebrates. ^{7/}

6/ United States Fish and Wildlife Service, Stream Evaluation Map - 1978 State of North Dakota.

7/ Rehwinkel, B. J., M. Gearges, and J. Wells. Powder River Aquatic Ecology Project. Annual Report, October 1, 1975-June 30, 1976, Utah, International Inc., 35 pages.

Species belonging to the minnow family are most abundant. For example, flathead chub comprised 90 percent of the fish fauna sampled in the Powder River in 1975. Channel catfish, sauger, and burbot were also present in the Powder and are found in many of the other streams ^{7/}. The Little Missouri is an exception to the other streams crossed by the line. In addition to these species, found in the Powder River, flathead catfish, northern pike, and walleye inhabit the Little Missouri River which is probably the best fish habitat in the area traversed by the line. ^{8/} The Department of Interior comments on the draft environmental statement (page A-20) also points out that the sturgeon chub (*Hybopsis gelida*), an uncommon to rare fish in Montana, is found in the Powder River. They also indicate that the 1978 North Dakota Stream Evaluation Map shows the entire Little Missouri River to be Value Class I, which is "highest-valued fishery resource."

Numerous species of wildlife are found along the route of the proposed line.

Pronghorn antelope utilize most of the right-of-way except for the badlands and forested section in Montana. They are most abundant in the South Dakota section, which contains most of the rangeland remaining along the route. Mule deer occur in the forested area and in lesser numbers out into the prairie where gullies and the valleys of intermittent streams provide cover and forage. White-tailed deer are found along the eastern portion of the line associated with brushy gullies and cultivated lands.

Carnivores present include coyote, fox, weasel, badger, skunk, and mink. Typical mammalian prey along the route are white-tailed jack rabbit, cottontail rabbit, thirteen-lined ground squirrel, and several species of mice. Several black-tailed prairie dog towns, ranging up to 40 hectare (100 acres) in size, are located within 1.6 kilometers (1 mile) of the proposed route in South Dakota.

Nearly 70 species of birds were observed in the summer of 1977 in habitat similar to that which the line will traverse about 48 kilometers (30 miles) to the south on the Montana/South Dakota border. The route is outside the principle sage grouse range, lacking large stands of sage, but a few may be present. Sharp-tailed grouse are present in the grasslands and at forest edges, and Hungarian

^{8/} Van Feckhout, Gene. Movement, Reproduction, and Ecological Relationships of Channel Catfish in the Little Missouri River, North Dakota, 1972-1973. University of North Dakota, 1974.

(gray) partridge are associated with the grainfields crossed by the line. Birds of prey likely to nest on or near the route include Cooper's and Sharp-shinned hawks (which nest in the woodlands), harriers, red-tailed hawks, merlins, kestrels, great horned owls, and golden eagles based on studies in the Long Pines. ^{9/}, ^{10/}

Several species of waterfowl, of which blue-winged teal are most numerous, nest around the several 20 ± hectare (50 ± acre) marshes and stock watering ponds located 1.6 to 4.8 meters (1 to 3 miles) from the proposed route.

No threatened or endangered species listed by the Department of the Interior (50 CFR 17.11) regularly utilize the area traversed by the proposed line. Arctic and American peregrine falcons might wander through the area during migration. Bald eagles are probably present during the winter months as migrants, though the area lacks the feeding perches and timbered roosts associated with water they tend to favor. There have been no confirmed sightings of whooping cranes and only a single unconfirmed sighting of the two birds in Hettinger in October 1975, about 48 kilometers (30 miles) northeast of the proposed route ^{11/}. There have been no reported sightings of black-footed ferrets in northwestern South Dakota for 3 years and none are likely to be present near the line. (Dr. Raymond Linder, Leader, Black-Footed Ferret Recovery Team, personal communication).

In their comments on the draft environmental statement (page A-20), the Department of Interior pointed that both the black-footed ferret and the whooping crane have been recently sighted in the general area. They also pointed out that the carcass of an adult male swift fox was recovered northeast of Scranton, in Slope County, North Dakota.

6. Recreation

Recreational opportunities within the right-of-way required for the line are insignificant except for hunting of game birds and small mammals.

^{9/} DuBois, Kristi. Breeding Birds Study - Long Pines Progress Report, Montana Department of Fish and Game Project MON 76-312, October 1977.

^{10/} Allen, George T. An Assessment of Potential Conflicts Between Birds of Prey and Human Activities in the Long Pines. Progress Report, Montana Department of Fish and Game Project MON 76-312, October 1977.

^{11/} Stearns-Roger, Inc. Analysis of Physical and Biological Environment, Antelope Valley Station, Volume I. Report prepared for Basin Electric Cooperative June 1977, p. 294 and 296.

Recreational opportunities within the proposed study area include camping at Woodruff Park (campground) about 19.3 kilometers (12 miles) east of Miles City and at Butte View State Campgrounds about 1.6 kilometers (1 mile) east of Bowman. The Butte View State Campgrounds has 55 trailer sites which also provides electrical outlets. The State of Montana has a roadside park about 59.5 kilometers (37 miles) east of Miles City and the State of North Dakota has a roadside park about 6.4 kilometers (4 miles) east of Marmarth. It is unknown if overnight camping is permitted at the roadside parks. The Bureau of Land Management has plans for developing Strawberry Hill Recreation area on Federal land located about 12.9 kilometers (8 miles) east of Miles City. The recreation area is now fenced and is on the north side of U.S. Highway 12. In North Dakota, the Cedar Hills area has been selected for potential inclusion in the state nature preserve system. The Little Missouri River is used by canoeists during spring and early summer months. The river bed is also used for snowmobiling during the winter months. Hiking is also a popular sport in the Little Missouri River area.

Throughout its alinement, the transmission line crosses six rivers: the Powder River, Little Missouri River, North Fork of the Grand River, South Fork of the Grand River, Moreau River and the Belle Fourche River. One river, the Little Missouri River, has been designated as a Scenic River by the state of North Dakota and is currently being considered as a potential addition to the National Wild and Scenic Rivers System by the Secretaries of the Interior and Agriculture.

Hunting opportunities within the corridor would be available for big game animals like deer and antelope or game birds like grouse, sage hens, and pheasants. In the North Dakota portion of the project, antelope hunting is considered the main recreation in the area.

Where access approaches have been retained, as requested by land owners, access for hunting would be increased; however, access to the line right-of-way would be limited by private landowners or land administering agencies.

7. Historical or Archaeological Sites

A literature search and contacts with the State Historic Preservation Officers of Montana, North Dakota, and South Dakota revealed the presence of 65 historic or archaeological sites within the 9.6-kilometer- (6-mile) wide study area for centering the proposed line. Thirty of the archaeological sites occur in Montana, and most known sites are within 3.2 kilometers (2 miles) of U.S. Highway 12. The transmission line will cross the routes taken by several military expeditions during the Indian wars of the 1870's. It also crosses the route taken by the Deadwood-Bismarck-Medora Stage Line, the Fort Pierre to Black Hills Stage Road, and the Fort Pierre-Deadwood Freight Road

during the period 1876-1886. There are no surface remainders of these routes in the vicinity of the proposed line. The only National Register ^{12/} site listed in the study area is the Mystic Theater at Marmarth, North Dakota, although several of the archaeological sites are described as having National Register potential. The Fort Dilts site is listed by the State of North Dakota as a Historic Site.

8. Service Facilities

Subtransmission, distribution, and telephone lines provide service to the many farmsteads and ranches in this area.

The Western Area Power Administration's Miles City Substation presently receives power over a radial 115-kv line. The Custer-Dawson County 230-kv line which passes near Miles City would be tapped and loop service would be provided through transformation to the existing Miles City 115-kv line. The new 230-kv substation will also provide the western terminus for the proposed Miles City-Hettinger-New Underwood line. Major transmission lines already intersect at New Underwood. Several transmission and distribution lines along the entire alignment would be crossed.

The existing transmission system in the eastern Montana/western North Dakota area was constructed prior to adoption of the Mid-Continent Area Reliability Coordination Agreement (MARCA) ^{13/} reliability criteria for interconnected operation and does not now meet those criteria. As shown in the Miles City-New Underwood Transmission Study ^{14/}, a wide area is subject to instability with accompanying cascading outages and loss of load for loss of critical high voltage transmission lines in the area. The eastern Montana/western North Dakota area separated from the Federal interconnected system 15 times since January 1973. Without the Miles City-New Underwood 230-kv line, this condition would continue to exist.

The applicable MARCA System Design Standards (November 12, 1969) identify two different levels of system reliability performance. The first level of performance states that with the MARCA system normal or with any critical generator, line, or transformer already out of service and operations adjusted to restore system security, the system shall be capable of withstanding the following probable contingencies without interruption of load due to instability or cascading.

^{12/} National Park Service, National Register of Historic Places, Federal Register 43 (26 - Part II): 5163-5345, February 7, 1978.

^{13/} Mid-Continent Area Reliability Coordination Agreement, System Design Standards, November 12, 1969.

^{14/} Western Area Power Administration, Basin Electric Power Cooperative and Montana-Dakota Utilities Co., Miles City-New Underwood Transmission Study, May 1978.

1. Loss of any line, generator, transformer or single bus section.
2. A permanent three-phase fault on any element including automatic reclosing if used.
3. A permanent phase-to-ground fault on both circuits of a double circuit line with automatic reclosing if used.
4. A permanent phase-to-ground fault on any element with delayed clearing due to a circuit breaker not operating.

Voltages and facility loadings shall be within applicable emergency limits following the above contingencies without further adjustment of generation. The second level of performance states that tests by simulation will be made to determine the effect of the following extreme disturbances on the performance of the bulk power supply system. System development shall be designed to minimize the spread of any interruption that might result from:

1. The sudden loss of the entire capability of a generating station.
2. The sudden loss of any lines from a generating station, switching station or substation by three-phase faults.
3. The sudden loss of all circuits on a common right-of-way by a permanent three-phase fault on each circuit.
4. The sudden dropping of a large load.

The 230-kv transmission line from Dawson County to Bismarck seems prone to faults because of its length and exposure, and many times tripping of this 230-kv line hopelessly overloads the underlying Williston-Garrison 115-kv tie, which in turn trips due to loss of synchronism. This occurs perhaps five to six times per year. Customer outages affecting an estimated 32,000 people resulting from these disturbances varied from momentary to 56 minutes. However, of greater concern during these disturbances is the amount of connected equipment that is subjected to overspeed and severe voltage swings. Equipment owned by an estimated 150,000 people is subjected to these stability problems. See Chapter C, Section 7, for further discussion on possible equipment damage.

The area is served by the Burlington Northern, Chicago Milwaukee St. Paul and Pacific, and Chicago and Northwestern Railroads; U.S. Highways 10, 12, 14, 16, 85, 212, and 312; and Interstate Highways 90 and 94. Minor township, county, and state roads are also located within the proposed study area. Commercial airports are at Miles City, Montana, and Rapid City, South Dakota. Municipal airports are located at Baker, Montana, and Bowman and Hettinger, North Dakota. Five privately-owned air landing strips are also located within the corridor. There are excellent public facilities, such as schools, churches, and hospitals. in the area served by the proposed transmission line.

9. Population and Level of Economic Development

The area between Miles City and New Underwood is agricultural. Approximately 35 to 40 percent of the land is cultivated with the remainder in wild hay and pasture. Wheat, other small grains, and hay are the major dryland agricultural products. Livestock production is the most important source of agricultural receipts. The economy of the area is largely dependent on agricultural activities and is expected to continue predominately so in the future. Location of the transmission line on the farms is expected to have little effect on use or valuation of the property. The imposition of a transmission line right-of-way upon a parcel of land imposes certain limitations upon the uses to which the land can be put.

Extensive gas and oil development contributes locally to the economy in the Baker, Montana, area. Future development of the three known coal reserve areas between Miles City and Baker, Montana, would also provide a contribution to the local economy.

According to the 1970 census, the population of Miles City was 9,023; Baker was 2,584; Bowman was 1,762; Hettinger was 1,655; and New Underwood was 416. No other large communities are located near the transmission line. Table I provides additional statistical data about the counties traversed by the transmission line.

The Roosevelt-Custer Regional Council for Development comments on the draft environmental statement (page A-49) pointed out that, due to recent expanded oil development in the Bowman area, the population of Bowman may now be closer to 2,500.

TABLE I
COUNTY STATISTICAL DATA

	Montana ^{15/}		Adams	North Dakota ^{16/}		Meade	South Dakota ^{17/}	
	Custer	Fallon		Bowman	Slope		Pennington	Perkins
Land Area								
(sq. km)	9 727	4 229	2 561	3 030	3 172	8 974	7 197	7 407
(sq. mi)	3,756	1,633	989	1,170	1,225	3,465	2,779	2,860
Population - 1970	12,174	4,050	3,832	3,901	1,598	16,618	59,349	4,769
Avg. Population/sq. mi.	3	2	4	3	1	5	21	2
Labor Force - 1970 (16 years & over)	4,692	1,540	1,540	1,490	1,045	6,520	23,918	2,074
∞ No. of farms - 1969	386	321	498	418	324	800	700	651
Land in farms								
(hectares - 1969)	926 760	388 920	258 200	302 720	293 810	857 890	536 230	698 920
(acres - 1969)	2,290,000	961,000	638,000	748,000	726,000	2,105,000	1,325,000	1,727,000
Avg. size farm								
(hectares - 1969)	2 411	1 211	518	724	907	1 065	766	1 074
(acres - 1969)	5,957	2,993	1,281	1,789	2,240	2,631	1,893	2,653

^{15/} U.S. Department of Commerce, County and City Data Book, 282-293, 1972

^{16/} Ibid., 354-365

^{17/} Ibid., 414-425

C. ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION

1. Land Use Changes

A total area of about 1 690 hectares (4,175 acres) would be included in the 32-meter-wide (105-foot) right-of-way for the transmission line, and an additional 7 hectares (17 acres) would be required for the line terminal substations. At most, 8 hectares (20 acres) of farm and rangeland would be taken out of agricultural production for structures along the 528-kilometer (328-mile) transmission line route plus 7 hectares (17 acres) for the terminal facilities and 8 hectares (20 acres) for structure line guys. The Bonneville Power Administration ^{18/} (BPA) recently conducted a study to determine the impacts on different crop yields related to farming operations near transmission line towers. Randomly counting wheat heads produced within a square foot or 0.093 square meter, it was found that within 15.2 meters (50 feet) of a tower the expected wheat yield would be reduced less than 10 percent. On the basis of these findings, the area of reduced yields for wheat and other small grains would be equivalent to 12 hectares (29 acres) out of production for this line. Also, the BPA studies were for a line utilizing steel structures with 4 legs. Use of wood-pole H-frame structures should facilitate farming operations over steel structures and cause a lesser impact on crop yields. See Chapter C, Section 4, for a possible explanation for the crop reduction. The total of 35 hectares (86 acres) taken out of agricultural production would be insignificant when compared to the total land available within the counties traversed by the transmission line.

Of the total 1 697 hectares (4,192 acres) required for line right-of-way easements and substation developments, about 1 674 hectares (4,135 acres) would continue to be farmed or pastured after construction of the transmission line and terminal facilities. In the course of gathering sales data, no noticeable difference in the selling price of rural properties with or without transmission lines has been found.

The line would cross two sections of land east of Miles City which have potential for subdivision. The existence of the line on this property would impose certain limitations upon the uses to which the land could be put, such as prohibiting the construction of a building on the line right-of-way.

Some structures may be located where the floodplains of the six rivers are crossed. Pursuant to Executive Order 11988, WAPA will avoid constructing new facilities within 100 year floodplains unless

^{18/} Bonneville Power Administration, Farming Around and Under Transmission Lines, June 1977.

there is no practicable alternative. For actions that are proposed to take place within a floodplain, WAPA will follow the procedures outlined in the floodplain/wetlands regulations of the Department of Energy at 10 CFR 1022. If there is no practicable alternative to location in the floodplain, WAPA will assure that the action is designed and modified so as to minimize potential harm to or within the floodplain. WAPA will also evaluate the proposal with respect to its conformity to applicable State or local floodplain protection standards. The structures will not encourage development of the floodplain, or increase the risk of flood loss or the impact of floods on human health, safety, or welfare.

2. Disturbance to the Landscape

Disturbances to the landscape would occur during construction and, to a minor extent, during maintenance of the transmission line. During construction, right-of-way clearing, construction sites, access trails, and scars such as tire tracks account for the major impacts to the landscape because of the disturbance to trees, shrubs, ground cover, the potential for erosion, and modification to the land form. Special sites 0.4 hectare (1 acre) are required within the planned easements for the stringing operation. Occasionally, some blading may be necessary to provide reasonably level sites for the stringing equipment. There would be from 100 to 150 stringing sites required for the line. At individual structure locations, it is often necessary to level the ground for the crane site when setting structures. At the most, 27.9 square meters (300 square feet) would need to be leveled for each crane site. There would be approximately 2,470 structure sites. During the 2-year field construction period there would be intermittent vehicle travel somewhere along the alignment. This travel would be restricted to a path within the right-of-way for almost the entire 528-kilometer (328-mile) length of line. In some instances access trails would probably get outside the proposed right-of-way due to steep terrain. The major construction activities are auger excavation, ground assembly, and erection of wood pole structures and stringing conductors. At times, this construction activity could be spread out over a 16- to 19-kilometer (10- to 12-mile) area. Construction activities for each phase, excavation, erection of structures or stringing in a particular area could be complete in about 2 weeks' time. Thirty-five to forty percent of the land is cultivated, with the remainder in pasture.

The potential for wind or water erosion of the soil is increased during the construction phase of the line. Some of the geologic formations traversed by the line are soft and non to poorly cemented. These formations are easily erodible in their natural state. Disturbance to these areas, such as vehicular travel or leveling for a cable pulling site, will aggravate this condition. Until the ground surface has been revegetated, the cable pulling sites and access trails would be subject to erosion.

In the area traversed by the transmission line only a small percentage of the land is classified as "prime farmland." There are no "unique farmlands" within the study area. In the North Dakota portion of the line, one parcel of prime farmland is crossed by the line.

Routine transmission line maintenance activities consist of an annual ground patrol, which is conducted during the noncrop periods. Emergency maintenance is occasionally necessary to replace damaged insulators or structures. During the growing season some crop damage could be experienced as a result of emergency maintenance.

3. Visual Effects

For the greatest portion of its length, with two exceptions, the transmission line and structures would be constructed in a prairie, farm, and range landscape.

A fairly rugged dissected area begins east of Miles City. Miles 6 through 20 are in medium to open pine forest. In this area, the transmission line would be visible for only 1.6 kilometers (1 mile) or less where it crosses meandering U.S. Highway 12.

Other interruptions to the prairies are the Badland areas, marked by well developed drainage areas and buttes. In these areas, the transmission line would be visible from time to time for about 180-275 meters (200-300 yards).

The Signal Butte Ranchettes Subdivision is located 1.6 kilometers (1 mile) south of Miles City Substation and behind a hill which is expected to shield the subdivision from view of the line. In the Strawberry Hill Recreation area, the line may possibly be visible from only the extreme southern edge of the area. Near the Woodruff Park Campground, Pine Hills Ranchettes, and Pine Ridge Estates, the route is pine forested and the line is not expected to be visible from the campground or subdivisions because of the tree coverage.

In the North Dakota Badlands area the line crosses the Little Missouri River, which has been designated by the State as a Scenic River. The segment of the Little Missouri River north of Marmarth is being considered as a potential addition to the National Wild and Scenic Rivers System by the Secretaries of the Interior and Agriculture. The actual line crossing will be as nearly a right angle as possible to minimize the visual effects. Some trade-offs were required for this crossing. A line crossing south of Marmarth would get into more potential irrigable land along the Little Missouri River and along Little Beaver Creek. ^{19/} South of Marmarth, the river valley broadens out and makes more land subject to future irrigation. South of Marmarth, the line would cross Little Beaver Creek and the

^{19/} North Dakota State Water Commission, The West River Study, SWC Project 1543, Series 30, C-9, C-18.

Little Beaver Creek drainage. South of Marmarth, the terrain is much rougher which would require more access trails to individual structure sites which also increases the potential for erosion. The route to the south would also require more special structures, i.e., tension, angle and guyed structures which also cause more interference to farming operations. The proposed route for the line north of Marmarth, North Dakota, would place the line on three scattered parcels of the Little Missouri National Grasslands. Under the North Dakota Siting Act, the Little Missouri National Grasslands and the Little Missouri River are classified as Avoidance Areas. These areas should not be considered in the routing of a line unless it can be shown there is no reasonable alternative. The Forest Service was consulted in regard to location of the line on the National Grasslands. By letter dated March 21, 1979, they advised WAPA that the linement selected will result in the least impact to the National Grasslands. The line is not expected to be visible from the Mystic Theater at Marmarth, which is the only National Historic Site within the study area. The Fort Dilts Historic Site (state designation) and Cedar Hills area are expected to be separated from the line by at least 1.6 kilometers (1 mile), and the line will be slightly visible from these sites. The line is not expected to be visible from the Butte View State Campground east of Bowman, as the tentative location of the new Bowman Substation is 6.4 kilometers (4 miles) south of town.

On the flat prairies it would not be feasible to camouflage the line, and it will be visible where it is about 1.6 kilometers (1 mile) or less from nearby county and township roads.

Interstate 94 was constructed adjacent and parallel to an existing Western Area Power Administration steel tower powerline (Custer-Dawson County) which will be intersected by the new line. Therefore, the new transmission line will be visible from Interstate 94 in the immediate vicinity of the Miles City Substation.

The line will cross U.S. 85 near Bowman, North Dakota. In South Dakota the line will cross U.S. 212 near Maurine and Interstate 90 near New Underwood. These crossings will be at 90 degrees and, therefore, will only be in view for about 1.6 kilometers (1 mile) in each direction.

The substations proposed at Bowman, Bison and Miles City will have a visual impact on the surrounding area. Measures to alleviate that impact are described in Chapter D.

The transmission line conductors, when new, are highly reflective. This condition will exist for 2 or 3 years until weathering dulls the finish of the conductors. As a result of this weathering, the special nonreflective conductors will not be used for the proposed transmission line.

The Federal Aviation Agency river crossing requirements for marking and lighting objects do not apply to structures less than 61 meters (200 feet) above ground line. The transmission line is not expected to have any structures above 30 meters (98 feet) high, therefore marking and lighting objects will not be installed on the line or structures.

4. Vegetation

The Bonneville Power Administration ^{20/} recently summarized the impacts of powerline construction and operation on vegetation.

Direct impacts on the form, composition, and density of vegetative communities result from removal and/or damage experienced during different phases of transmission construction and maintenance. In heavily wooded areas, establishing survey lines involves cutting brush, branches, and trees; right-of-way clearing involves only the removal of trees and brush within the right-of-way that could interfere with the safe construction and operation of the transmission line. Access approach construction requires additional vegetation removal. Impacts on vegetation will not be significant. The types of surface disturbance that can be expected from this type of construction is generally that caused by vehicular traffic and leveling for cable pulling sites. Special construction practices are not economically warranted to minimize these impacts on vegetation. (See Chapter A, Section g for previous discussion of right-of-way clearing and maintenance.)

Once construction and clearing activities have ceased, the original vegetation tends to return through a gradual succession of change of vegetative types. The general succession of vegetation tends to be from grasses and herbs to shrubs to a final cover of trees depending on the dominant or climax vegetation. In the majority of cases, the vegetation will recover naturally.

Where structures interfere with cultivation, inconvenience and additional operator time result from the need to establish new patterns. Changes are especially inconvenient where large equipment, such as rod weeders, are utilized. The potential for equipment damage increases around guyed structures. A small reduction in crop yield immediately around structures may result from mechanical means such as overworking of soil, seed loss, overfertilization, overlapping coverage of weed control chemicals, and harvest losses. Magnetic or electrical fields associated with the transmission line are not expected to affect crop yields. Transmission lines have little or no effect on crop rotation.

^{20/} Bonneville Power Administration, Draft Environmental Statement, The Role of the Bonneville Power Administration in the Pacific Northwest Power Supply System: Appendix B BPA Power Transmission System; Draft Program Environmental Statement and Planning Report, July 22, 1977.

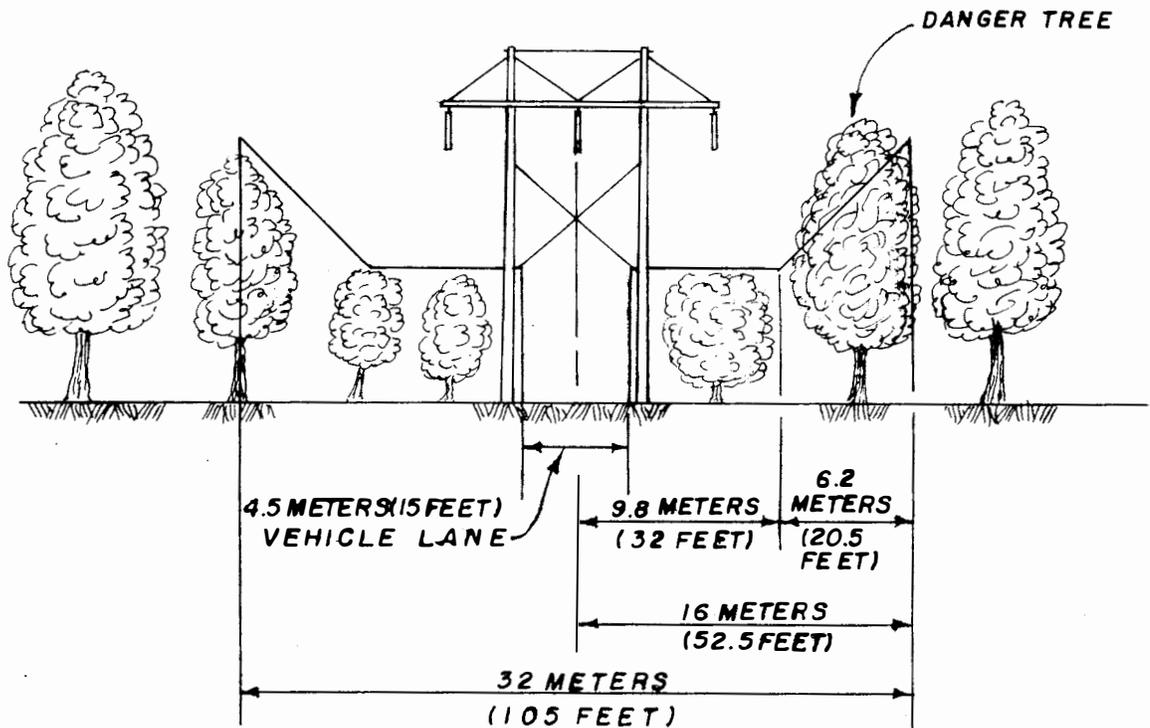
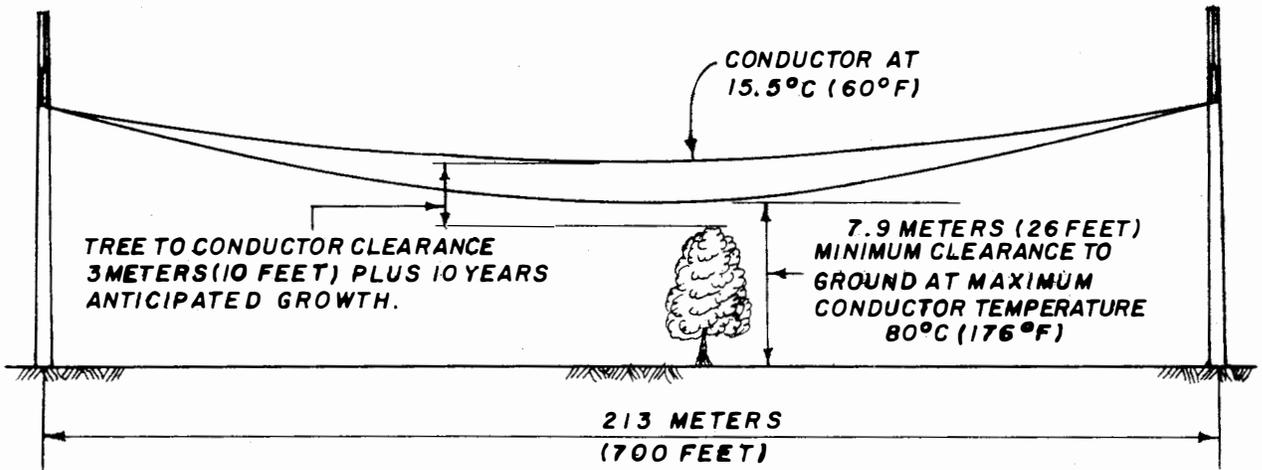
For much of its length, the proposed transmission line would be placed at or near section lines or adjacent to existing highways or roads. Where the line is located near roads, rather than at section lines, additional disturbances to farming operations will occur.

Access to most structure sites is readily available from secondary roads and farm trails in North and South Dakota. A permanent maintenance road and vegetative control will not be required along the right-of-way in South Dakota. A temporary access trail road will be required to cross a narrow arroyo in Slope County, North Dakota. Vegetation will be disturbed only during the construction period and should be restored by natural processes along most of the route. No permanent native vegetative loss or change in these States is expected except for the sites of the individual structures, which will occupy about 0.37 square meter (4.0 square feet) each.

In the broken wooded area of Montana, a permanent 4.6-meter-wide (15-foot) access/-construction/maintenance trail will be needed. In the event of construction of the transmission facilities in a straight line, this trail could be up to 48.3 kilometers (30 miles) long and could replace a total of 22.1 hectares (54.5 acres) of mixed grassland and forest. Actual tree coverage for access trails cannot be determined until the final centerline has been selected. Traffic would be infrequent following construction, and grasses would colonize the trailway.

Herbicides would be used to prevent undesirable weed growth in the substation yards and at some transmission line structures. When used in accordance with recommended procedures (label instructions), the herbicides would not be a hazard to fish or wildlife.

Safety of the line requires removal and/or control of trees beneath the conductors. If the line were being constructed across flat terrain, this would mean periodic removal of mature pines from a corridor 19.5 meters (64 feet) wide immediately beneath the line and removal or topping of trees for a distance of about 6.2 meters (20½ feet) on either side of that corridor. Thus, tree coverage on a total of about 26.8 hectares (66.2 acres) would be affected in the Pine Hills area east of Miles City. Exhibit VI shows tree to conductor clearance and right-of-way clearing. All timber 3 inches in diameter or larger is considered to have commercial value. The timber which has to be cut would be limbed and decked at an accessible location. On Bureau of Land Management administered lands, the timber would be disposed of by the Bureau of Land Management. Grasses such as western wheat, blue grama, and needle-and-thread grass, plus shrubs and young pines would take over the cleared area. In actuality, the disturbed zone will be somewhat less. The tree stands are not continuous throughout the "forested" area and the terrain is hilly. Some structures will be installed on hillsides; and where the line crosses a valley, less clearing will be needed to safeguard the conductors. Thus, the exact amount of disturbed forested area cannot be calculated in the absence of a detailed topographic survey and until structures are sited exactly.



**RIGHT-OF-WAY CLEARING
(230 - KV)**

EXHIBIT VI

5. Fish and Wildlife

There will be no impacts of fish from construction of the proposed transmission line. Structures will be set well back from the edge of watercourses and machinery will not enter live streams.

The Bonneville Power Administration also conducted an in-depth review of the types of impacts construction and maintenance of transmission facilities have on wildlife. Impacts are expected to be minor and primarily concentrated on small mammals during the construction phase. Some habitat will be destroyed by heavy machinery and some small mammals will be killed during construction, but the only habitat permanently lost will be that occupied by structures or the access trails. The remainder of the disturbed habitat will be rapidly recolonized as it is revegetated.

Following construction there will probably be occasional, unquantifiable losses of birds which collide with the conductors; however, the line is at a sufficient distance from wetlands and principal north-south migration paths that such accidents would be unusual. In the review of the draft EIS the Department of Interior (page A-22) pointed out that waterfowl occupying the numerous stockdams along the alignment, as well as the various passerine birds which breed along the alignment or migrate through area, will be affected.

Where wooded areas have been opened up along the right-of-way, there may be slight localized increases in the number of species of birds caused by the edge effect and more diverse habitat created by the corridor. The eastern ponderosa forest, which the line crosses, is typically open and the present habitat is already fairly diverse. Tree stands in the vicinity of the line are rarely more than 1.6 kilometers (1 mile) across. For these reasons, changes in bird fauna are expected to be relatively minor if any occur at all. No species will be lost to the area, and none that do not presently occur there are likely to colonize it.

Mule deer will find a slight increase in forage in the low-growing vegetation of the right-of-way through the wooded area. The amount of habitat thus created is minor in comparison with that already available and no change in numbers is expected. Likewise, road and trail access is within walking distance of the right-of-way already, and no additional deer harvest is expected to result from construction of the transmission line.

The existence of the transmission line is not expected to affect any strutting grounds for sage grouse or sharp-tailed grouse that may exist along the line right-of-way. Short term disruptions may occur during the construction phase of the line.

The line may be a minor advantage to birds of prey in the prairie area by providing hunting perches which are generally in short supply. ^{21/} Few trees grow naturally on the northern plains, and power and telephone poles are regularly used as perches by raptors. Conductors and grounded hardware on the line will be placed far enough apart (6.7 meters or 22 feet) to preclude accidental electrocution of large birds.

No effects on endangered species are expected. It is conceivable that bald eagles and peregrine falcons might occasionally use the structures as perches during migration as described above, but both species are so rare that such use is unlikely. The line is 160 kilometers (100 miles) west of the main migration route of whooping cranes along the Missouri River and generally parallels it so collisions are unlikely. Searches for black-footed ferrets do not yield conclusive results, but there are unlikely to be any associated with the prairie dog towns near the right-of-way (Personal Communication, Dr. Raymond Linder). Even if ferrets were present, the only permanent disturbance caused by the line within a prairie dog town would be the loss of 0.37 square meter (4.0 square feet) of grassland occupied by each structure.

6. Effects on Historic and Archaeological Resources

No impacts to sites listed on the National Register of Historic Places or other archaeological or historic sites are anticipated. A contract has been let for a field examination along the centerline of the proposed route to locate any sites which may be present. The spacing of structures and precise alignment is flexible making it possible to avoid any sites identified during the survey. (See Sections D.2.a.(3) and D.4.a., for further discussion on procedures to be followed in the event any new sites are discovered during construction).

7. Population and Level of Economic Development

Section A.1.e. of this environmental statement described the types of construction crews that could be used in the construction of the line. The actual numbers of people working at any given time, however, will be dependent on which contractor is selected to do the work and the construction schedule it develops. In work of this nature, the individual crews are usually in an area for a short period of time (two to three weeks) before moving on. Generally, the workers occupy small travel trailers, motels, boarding houses or other similar short-term rentals. The economic and demographic effects of the

^{21/} Stumpf, Alan. An Experiment With Artificial Raptor Hunting Perches. The Bird Watch, The Bird Populations Institute, Kansas State University, 5(7)1-2, 1977.

migratory nature of this work were not studied in detail during the development of the EIS. However, there are various living and eating accommodations available along the proposed alignment that should be adequate to support the anticipated influx of workers. In all probability, this type of construction will provide significant local economic benefits during the construction period.

WAPA presently has Operations and Maintenance crews at Glendive, Montana, and Rapid City, South Dakota. Montana-Dakota Utilities Co. maintains crews at Baker, Montana, and Lemmon, South Dakota. These crews will do O&M work for the proposed line. No increases in crew size are anticipated so there should be no increased impacts on the social or economic environments of the area as a result of these activities.

No adverse biological effects or health hazards would be expected as a result of magnetic fields under the proposed transmission line.^{22/}, ^{23/}, ^{24/} Experimentation with plants and animals, clinical tests, and 25 years operating experience have not produced convincing evidence of any harmful effect of exposure to the electric or magnetic fields associated with 230-kv transmission lines. No significant effects on humans, animals, or plants would be expected from the low ozone concentrations produced by the transmission line. Experience indicates that annoying shocks are occasionally experienced by people under high-voltage transmission lines, but they do not appear to be frequent or to represent a serious hazard.

When air is stressed by an electric field, the air is partially ionized and corona occurs. The effects of transmission line corona, called radio interference (RI), are primarily in the AM standard broadcasting band (535 to 1605 kHz). The effects fall off rapidly with increasing frequency; therefore, FM radio, citizens band radio and TV reception are largely unaffected. Both signal strength and noise vary widely from time to time at any given location depending on many factors. For reliable reception in a rural primary coverage area, signal strengths of 40-54 dB above one microvolt per meter are

22/ Bonneville Power Administration, Electrical and Biological Effects of Transmission Lines: A Review, June 1977.

23/ Miller, M. W. and Kaufman, G. E., High Voltage Overhead, Environment, 20(1), 6-15, 32-36, January/February 1978.

24/ U.S. Department of Energy, Dickey-Lincoln School Lakes Transmission Project, Draft Environmental Statement, March 1978.

required. The estimated fair weather radio interference level of the transmission line is 43 dB at 15.2 meters (50 feet) (edge of right-of-way), 35 dB at 30.5 meters (100 feet) from the centerline, and 26.4 dB at 61.0 meters (200 feet) from the centerline. At each distance, the estimated foul weather interference level is about 15 dB higher. The quality of reception during rainy weather and the quality of reception during fair weather of some AM radio broadcast stations with weak signals may be reduced in locations close to the right-of-way. AM radio interference should not be experienced in fair weather at lateral distances greater than 61.0 meters (200 feet) from the outer conductor. At lateral distances beyond 61.0 meters (200 feet), the reduction attains an approximately linear relationship.

As a practical matter, Western Area Power Administration's and Montana-Dakota Utilities Co.'s experience with hundreds of miles of existing 230-kv transmission lines indicates that the construction and operation of the proposed 230-kv line will not adversely affect any of the existing radio, television, telephone, microwave or other communication circuits.

The existence of the line is not expected to affect the broadcast characteristics of the three VHF (very high frequency) radio towers located about 12.9 kilometers (8 miles) east of Miles City because of their high frequency and the horizontal and vertical separation of the line from the radio towers. Interference to local AM radio reception may occur adjacent to the line such as near highway crossings but is not expected to be significant. Interference may increase in adverse weather during heavy rains, fog or frost conditions.

The proposal is intended to provide an additional 230-kv transmission line which would improve the Federal system reliability in eastern Montana and the western Dakotas for loss of existing 230-kv area transmission or severe faults in central North Dakota. In North Dakota the line would be separated by 64-97 kilometers (40-60 miles) from existing Federal lines to minimize common outages caused by tornadoes and localized ice and sleet storms. The transmission line would have line guys installed on the structures at preselected intervals to prevent cascading failure to the wood-pole structures in the event of ice buildup on conductors during an ice storm.

During system disturbances, equipment connected to the system is subjected to overspeed and severe voltage swings. Severe undervoltage can cause induction motors and rotating machines to burn out, since they are constant power devices, and if the voltage goes down, the current increases. Excessive overvoltage would stress equipment insulation and may cause arcing and also overexcitation of transformers. Underfrequency would increase core losses in transformers.

There is not expected to be any significant impacts resulting from the line crossing the oil, gas, or coal fields. Electrical clearances as established by safety codes would be met or exceeded. The transmission line could be relocated in the event of future development of strip mines within the corridor, therefore the existence of the line is not expected to affect the development of the coal reserves.

No significant effect on air and water quality is anticipated. Federal, State, and local air and water pollution law requirements would be met during construction and operation and maintenance.

D. MITIGATING MEASURES TO BE IMPLEMENTED IN THE DEVELOPMENT OF THE PROPOSAL

Throughout the planning for the proposed Miles City-New Underwood 230-kv line there have been a number of mitigation concepts proposed that will be implemented. WAPA realizes that construction of the line will result in some impact on the human environment. The intent of these mitigation measures is to lessen the severity of those impacts so as to make the project more acceptable to the public. Mitigation measures proposed are in the areas of Planning and Design, Construction, Operation and Maintenance, and Natural Resources Management and Protection.

1. Planning and Design Considerations

a. Location of the Transmission Line

Design, location, clearing, and construction of the transmission line would follow the guidelines in the Federal Government publications of Environmental Criteria for Electric Transmission Systems ^{25/}, Environmental Guidebook for Construction ^{26/} and the National Electric Safety Code ^{27/}. Where river crossings or highway crossings occur, structures would be spaced with long spans and set back from the river or highways as far as practicable. The final location of the line, as shown in this final EIS, will impact individual landowners. Meetings will be scheduled with each individual landowner to explain to them which lands are needed for the line and to find out what specific problems each individual will have, faced with that location.

b. Access

The transmission line has been located to take full advantage of existing county and state roads that can provide access for construction and maintenance purposes. In this way, only a minimum of new access trails will be needed.

c. Siting Process by the State of North Dakota

The portion of the transmission line that is being constructed in North Dakota will be built by Montana-Dakota Utilities Co. (MDU). MDU has made an application to the State for a Certificate

^{25/} U.S. Department of Interior and U.S. Department of Agriculture, Environmental Criteria for Electric Transmission Systems, 1970.

^{26/} U.S. Department of Interior, Environmental Guidebook for Construction, 1973.

^{27/} Institute of Electrical and Electronics Engineers, Inc., National Electric Safety Code, February 28, 1977.

of Corridor Compatibility from the Public Service Commission. Using the process, there will be additional opportunity for public scrutiny of the project.

d. Materials Selection

The project participants were faced with a choice of materials to use for line towers, either wood or steel. Wood-pole, H-frame construction is an acceptable construction material for this 230-kv transmission line and would tend to blend well with the landscape. Procurement and manufacturing of structures made with wood, a renewable resource, would be accomplished with less environmental impact and energy consumption than if metal structures were used throughout. The wood-pole structures are easier to assemble and erect than steel structures which would reduce the number of visits to structure sites during the construction period; also the concrete requirements needed for steel structures would be eliminated. Wood-pole construction would have a slight advantage as structures are normally shorter than lattice-steel structures. In the event of failure of a structure or a portion of the line, it is easier to restore wood-pole lines after failure than it is to restore lattice-steel structure lines. There are other trade-offs though that entered into the selection of wood. The wood-pole structures generally have a lower capital cost but also have a shorter amortized life than steel structures. They also have a higher annual maintenance and replacement factors.

For transmission lines with wood-pole structures, it is expected that there would be a 25 percent replacement of wood-pole structures (complete with appurtenant fixtures and hardware) in 35 years compared to 5 percent replacement of steel structures (complete with appurtenant fixtures and hardware) in 50 years. ^{28/}

The new substations at Miles City, Bowman, and Bison would utilize low profile steel structures for improved substation appearance. The substation additions at Baker, Hettinger and New Underwood would be expansions of existing yards which were designed and constructed with lattice steel structures. Lattice steel structures would also be used for the proposed substation additions. At New Underwood Substation, the existing steel structures are "Cor-Ten" steel which forms a russet brown oxide coating as the steel weathers. Where the substations are visible from highways, some degree of visual impact would occur.

e. Design Considerations

All structures are grounded at each pole. To prevent electrification of fence lines, wood-post fences parallel to and within 23 meters (75 feet) of the centerline are grounded at 400-meter ($\frac{1}{4}$ mile) intervals and fences with steel posts are grounded at

^{28/} Bureau of Reclamation, Replacements - Units of Property and Service Lives, xxiii, March 1968.

800-meter ($\frac{1}{2}$ mile) intervals. One grounding post is used at each side of the right-of-way for fences crossing under the line. One grounding post is used at the hinge end and latch end of each gate.

The alinement through farms would be selected as far away from buildings as reasonable to minimize Radio Interference (RI) with the farmstead. Sufficient physical separation would be provided from dwellings so that there would be little, if any, adverse effects on radio or television reception during normal weather conditions. Interference may increase in adverse weather during heavy rain, fog or frost condition. The line would remain 152 meters (500 feet) from living quarters and 91 meters (300 feet) from other buildings. The conductor size and spacing would be adequate not to cause interference with radio or television reception under projected line loading. When a new line is first energized, there may be local RI complaints. RI should not be a problem once all the "loose hardware" connections are corrected.

2. Construction Considerations

a. Construction Specifications

Construction of the line will be handled by Federal construction contract. In North Dakota, the Montana-Dakota Utilities Co. will issue a contract for construction of that portion of the line. The Federal contract will be based on a set of construction specifications that will contain several clauses concerning protection of the environment. These include areas of (1) burning slash, (2) cleanup, (3) preservation of historical and archaeological data, (4) dust abatement, (5) landscape preservation and (6) compliance with local rules and regulations.

(1) Burning Slash

During construction, burning of any slash would be permitted only at times when conditions are considered favorable for burning and at locations approved by proper state or local authorities. All burning would be so thorough that the materials are reduced to ashes. In lieu of burning combustible material, the material may be reduced to chips of 12 millimeters ($\frac{1}{2}$ -inch) maximum thickness, distributed uniformly on the ground surface within the right-of-way and mixed with the underlying earth so that they would not support combustion. Since the line is routed principally in grassland or farmland, tree clearing would occur only in the Miles City area or at river crossings.

(2) Cleanup

Upon completion of the work, the contractor will be required to remove and dispose of all excess materials including rubbish, used containers and excess materials. During its operation, the contractor will maintain a neat and safe job site that will not constitute a risk to its employees or the general public.

(3) Preservation of Historical and Archaeological Data

In the event historical or archaeological remains are discovered during construction, the state archaeologist (or Federal Agency if on Federal lands) would be notified for a determination of the disposition of the discovery, and the contractor would provide such reasonable assistance and cooperation as may be necessary to preserve the findings for removal or other disposition by the Government. In the event fossils or other paleontological finds are discovered, the state geologist and/or Federal agency would be notified as above.

(4) Dust Abatement

During the performance of the work, the contractor would furnish all labor, equipment, materials, and means required, and would carry out proper and efficient measures wherever and as often as necessary to reduce dust and to prevent dust which has originated from his operations from damaging crops, orchards, cultivated fields, and dwellings, or causing a nuisance to persons.

(5) Landscape Preservation

Construction specifications would require that the contractor exercise care in preserving the natural landscape and conduct his construction operations so as to prevent any unnecessary destruction, scarring, or defacing of the natural surroundings. All work areas would be smoothed and graded to conform to the natural appearance of the landscape. Construction specifications would require that unnecessary destruction, damage, or defacing as a result of the contractor's operations be repaired, replanted, reseeded or otherwise corrected at the contractor's expense. Very little erosion resulting from the effects of construction is expected.

(6) Compliance with Environmental Laws and Regulations

The contractor would be required to comply with all applicable Federal laws, orders, and regulations and the laws of the States of Montana, North Dakota, and South Dakota, concerning control of pollution of streams, reservoirs, ground water, or water courses with respect to pollution of the discharge of refuse, garbage, sewage effluent, industrial waste, mineral salts, or other pollutants.

The contractor would be required to comply with all applicable Federal, State, and local laws and regulations concerning the prevention and control of air pollution. In conduct of construction activities and operation of equipment, the contractor shall utilize such practicable methods and devices as are reasonably available to control, prevent, and otherwise minimize atmospheric emissions or discharges of air contaminants.

b. Construction Techniques

Use of the tension stringing technique would also reduce the impact of line construction since heavy stringing equipment would not have to move from structure to structure along the entire length of right-of-way. Stringing equipment would be set up at 3- to 5-kilometer (2- to 3-mile) intervals. This stringing technique would also allow trees to be trimmed instead of removed and underbrush left undisturbed. In areas where trees must be cut or removed, the Western Area Power Administration does not plan any formal replacement, but the landowner would be compensated for damages, which compensation can be used by the landowner to replace trees when and where he desires.

c. Right-of-Way Uses

The imposition of a transmission line right-of-way upon a parcel of land imposes certain limitations upon the uses to which the land can be put. To the extent that land use is limited, the value of the property may be affected. Property owners are compensated for any reductions in the value of their land which occur as a result of the right-of-way easement agreement they enter into with Western Area Power Administration.

3. Operations and Maintenance Considerations

a. Reseeding Programs

While the nature of the area is one wherein vegetation tends to reestablish itself after minor disturbance there may be areas where reseeding will be necessary. The construction specifications will contain provisions for reseeding areas that are severally disturbed.

If, after construction, it becomes apparent that some additional remedial work will be needed either due to increased erosion or failure of an initial seeding program or some other cause occasioned by construction, then WAPA will take action to correct the problem. Reseeding will be used where it is apparent that the program will be successful.

4. Natural Resources Protection and Management Considerations

a. Cultural Resources

In studying the corridor, a reconnaissance level archaeological study was conducted to ascertain the relative importance of the area from a cultural resources standpoint. This study dealt mostly with a literature search, contacts with the respective State Historic Preservation Officer (SHPO) and a check of the National Register of Historical Places. The intent of the study at that level of planning was to identify those areas that would be severely impacted by the location of a transmission line

so they could be avoided. Suggested alignments have now been developed and a cultural resource study within the proposed right-of-way for the line is underway. The new study will identify the cultural resources that will be impacted by construction of the facility. The study will also determine the eligibility of the sites for nomination to the National Register. The results of the study will be provided to the respective SHPO's for review and consideration. In the event an archaeological site of National Register quality is found and cannot be avoided by construction, then appropriate consultation with the affected SHPO will commence and a plan for mitigation of the site developed.

b. Endangered Species Resources

In the Draft Environmental Statement, conclusion was drawn that construction of the transmission line would not impact threatened or endangered species. These conclusions were based on a review of existing literature on the range of these species as well as personnel communication with endangered species recovery team leaders. In their letter dated December 12, 1978, commenting on the draft EIS, the Department of the Interior indicated that these conclusions may be erroneous in that both the black-footed ferret and the whooping crane have recently been sighted in the area. WAPA is continuing coordination with Interior in this regard and will consult with the Fish and Wildlife Service in Denver, Colorado, to determine that the effect of construction of the line will be on these species.

E. UNAVOIDABLE ADVERSE EFFECTS

The transmission line would have some adverse impact on the aesthetics of the natural environment. The transmission line would be visible from Interstate 94 in the immediate vicinity of the Miles City terminal in Custer County, and from Interstate 90 for a distance of about 1.6 kilometers (1 mile) in each direction in Pennington County where the line approaches New Underwood Substation.

The transmission line would also be visible to travelers where the line crosses U.S. Highways 12, 14, 16, 85, and 212 and parallels state, county, and township roads. The new 230-kv line would increase the visual impact of transmission structures near the existing substations at Miles City and Baker, Montana, Hettinger, North Dakota, and New Underwood, South Dakota.

Selective clearing of trees and brush would be required in the Pine Hills area east of Miles City, Montana, and at the cross drainages and rivers intersected by the line.

There would be some occasional loss of bird life as a result of collision with structures or conductors, particularly where the line crosses the rivers where intermittent woody areas and water attracts birds. While the extent of loss cannot be quantified, it is expected to be insignificant. Wildlife dependent on the cover and nesting habitat preempted by structures or removed for the line would be lost.

As a result of intrusion by man, there would be some effect on wildlife use of the 1 697 hectares (4,192 acres) of land required for the right-of-way. Wildlife may feed in the right-of-way area, but would otherwise avoid this area, and this would result in some degree of impact to wildlife.

At most, 35 hectares (86 acres) of farm and rangeland would be removed from agricultural production by structures, guys, and line terminal facilities. The landscape would incur some scars, such as tire tracks, from construction activity; however, where unnecessary destruction, scarring, damage, or defacing may occur as a result of the contractor's operations, it would be repaired, replanted, reseeded, or otherwise corrected and should disappear within two or three growing seasons for pastureland and within one growing season for land under cultivation. Structures located on cultivated fields would cause some minor deviation from normal farming practices; however, the area between structures can be farmed.

In the North Dakota portion of the line, one parcel of prime farmland is crossed by the line. At most, this crossing will include the placement of three structures on this parcel of land classified as prime farmland.

The Little Missouri River would be crossed in the vicinity of Marmarth, North Dakota. This river has been designated by the State as Scenic River. The segment of the Little Missouri River north of Marmarth is being considered as a potential addition to the National Wild and Scenic Rivers System by the Secretaries of Interior and Agriculture. The actual line crossing will be as nearly a right angle as possible to minimize the visual effects. The proposed route for the line north of Marmarth would also place the line on three scattered parcels of the Little Missouri National Grasslands. Under the North Dakota Siting Act, the Little Missouri National Grasslands and the Little Missouri River are classified as Avoidance Areas. These areas should not be considered in the routing of the line unless it can be shown there is no reasonable alternative.

During construction some unavoidable air pollution would be caused by dust raised during dry periods by construction vehicles and from earthwork operations. Also, air quality would be temporarily affected by exhaust emissions from construction vehicles and combustion by-products from slash burning. These impacts are expected to be seasonal, localized, and short-lived.

Local noise levels would increase during line construction. Though unavoidable, these impacts are expected to be intermittent, of short duration, and would occur during construction throughout the length of the line.

F. RELATIONSHIP BETWEEN LOCAL AND SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

During construction the right-of-way would be temporarily disturbed. Farm and pasturelands beneath the transmission line would revert to previous uses following construction except for the areas occupied by structures. It would be necessary to maintain woody vegetation at a lower height in the natural wooded area crossed by the transmission line than it is at present. This would create some additional edge effect which could be expected to diversify wildlife and plant populations in other circumstances. However, the natural wooded area in the region traversed by the line covers a large area and has abundant "edge" already and new habitat niches would not be created.

A slight annual mortality of birds will occur as a result of collisions with the line, probably concentrated where it crosses wooded movement paths along the six rivers. The extent of losses due to collisions cannot be predicted. Based on present knowledge, no numerically or geographically rare species are likely to be affected; therefore, significant population changes are not anticipated.

There would be a visual aesthetic effect and restrictions on future construction of buildings or sprinkler irrigation development within the right-of-way so long as the transmission line is in use. When and if the line is abandoned at some future date, the right-of-way would be available for the same uses possible today.

Other uses of land occupied by the terminal facilities would be precluded indefinitely unless and until some action is taken to remove the terminal if it is no longer needed.

While the availability and reliability of the electric power supply does not by itself cause residential, commercial, or industrial development, or the resulting economic growth and population concentration, the lack of a dependable power supply could inhibit these activities. The line would provide additional high voltage transmission in the area to improve system stability and improve reliability of service to existing area loads. Construction of the line, in itself, is not expected to directly contribute to significant changes in population patterns in the service area.

G. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The transmission line and terminal facilities would be a permanent feature with a uniform and consistent pattern of operational and maintenance characteristics and requirements. The land utilized for the project could be considered to be modified in character; however, it should not be considered as irreversible or irretrievably committed. The facilities proposed could be removed and the land returned to its original use as agricultural land. However, these facilities are planned to be in place for a minimum 35 year amortized life. A certain amount of labor, energy, and material would be used in construction of the transmission line. The labor and energy expended for construction of the line could not be retrieved, but some of the material used for the line could be salvaged if the transmission line were to be removed prior to deterioration of these materials.

The line will require about 4,900 poles from 20 to 26 meters (65 to 85 feet) long averaging about five structures per kilometer (3,280 feet) and will utilize about 2 325 metric tons (2,560 short tons) of conductor.

An unquantified amount of petroleum products, such as gasoline, aviation fuel, diesel fuel, and lubricants, will be required to construct, operate and maintain this line over its anticipated life.

The construction costs for the proposed facilities is estimated at \$55,200,000. These dollars would be irreversibly committed except for a salvage value that may be gained at the end of the anticipated life.

H. ALTERNATIVES TO PROPOSED ACTION

1. Nonconstruction of Transmission Line

If the proposed transmission facilities were not built, the impacts described in the previous sections would not occur. If the proposed or alternate power facilities are not provided, the system reliability required to meet existing and increasing power demands cannot be attained; thereby increasing the probability of system instability and resultant power outages. The existing system would not provide enough capacity to assure future system stability under disturbance conditions. The resulting power outages in the area (15 since 1973 on the Western Area Power Administration System) and projected poor voltage regulation resulting in a voltage range of 85 volts to 98 volts for a 110-volt power supply by 1982 would have a significant impact on industry, agriculture, and commerce as well as the health and welfare of the public in these areas. ^{29/} At these voltages which are 25 to 12 volts (23 to 11 percent) below the normal household voltage of 110 volts, most appliances or motors would not function properly. Changing Times Magazine ^{30/} advises that a voltage reduction of 5 percent may cause a television picture to shrink slightly, but it shouldn't damage the set. Appliances with heating elements, such as toasters and electric ranges, would be unaffected except that they may take longer to heat up. If the voltage drop exceeds 10 percent, motors can overwork and heat up.

If the Western Area Power Administration fails to build its share of the proposed transmission line, other electric utilities in the area probably would construct transmission facilities necessary to meet their obligations. Any program by the utilities would be at least equal in size, cost, environmental impact and with all likelihood, the same general routing as the proposed project.

With or without the proposed transmission facilities, the area is expected to retain a largely rural agricultural character with some residential and commercial expansion expected in the various towns located in the transmission line service area. The area is expected to continue its present economic growth; however, to provide power for this growth, other power facilities not interconnected to this line would be required. For the Dakotas-Montana area, an average electrical load growth of 5.70 percent in the summer and 5.78 percent in winter is expected through 1987. ^{31/}

^{29/} Western Area Power Administration, Basin Electric Power Cooperative and Montana-Dakota Utilities Co., Miles City-New Underwood Transmission Study, May 1978.

^{30/} Changing Times, What to do When the Power Fails, 32(11), 39-40, November, 1978.

^{31/} Mid-Continent Area Power Pool, Generation and Transmission Report 1978-1987, 7, June 1978.

2. Buried Cable

While it is technically possible to bury short segments of line at 230-kv, the technology for doing so has not advanced to the stage where it is considered energy efficient or economical for a line of this length. The 1970 National Power Survey ^{32/} indicates that underground transmission may cost from 10 to 40 times as much as overhead lines when equal line capacity is considered. It is estimated that buried cable would cost 15 times as much as the proposed 230-kv overhead wood-pole line.

Severe technical problems would be encountered because of the length of the proposed line. The following excerpt from the Advisory Committee's 1966 report to the Federal Power Commission ^{33/} illustrates the problem encountered with underground cables.

"While the use of high voltages solves many problems, it also creates new ones. In the case of high voltage underground cables one problem has special significance. The distance from the outer surface of the conductor to the shield or sheath (which is at earth potential - zero voltage) is so small (on the order of 1 inch), that in an ac system there is a continuous flow of so-called 'charging current' between the conductor and the sheath. This current serves no useful purpose. Its magnitude varies inversely with the thickness of the insulation and varies directly with the length of the cable. It also increases with voltage. With 345,000 volts practically all the current carrying capability of the conductor would be utilized by this charging current in a distance of about 26 miles, and there would be no capability left for useful current to be transmitted. Techniques are available for overcoming these effects by the use of 'compensation' equipment, but this is very expensive. Charging current is also present on overhead lines, but its magnitude is much smaller because of the great spacing between conductors and the distance from the conductors to ground. Charging currents are not a controlling factor in distribution line design because of the lower voltages and shorter line length."

^{32/} Federal Power Commission, the 1970 National Power Survey, December 21, 1971.

^{33/} Federal Power Commission, Underground Power Transmission, A Report to the Federal Power Commission by the Commission's Advisory Committee on Underground Transmission, April 1966.

Bonneville Power Administration ^{34/} indicates that the length for a given cable at which zero power capacity exists (without reactive compensation) is known as its "critical length," and that the critical lengths for standard transmission voltages are 72.4 kilometers (45 miles) for 115-kv, 56.3 kilometers (35 miles) for 230-kv, 41.8 kilometers (26 miles) for 345-kv, and less than 42.0 kilometers (25 miles) for 500-kv.

In rural areas the estimated cost of overhead 230-kv lines is \$90,000 per 1.6 kilometers (1 mile) and the cost of buried cables would amount to \$1,300,000 per 1.6 kilometers (1 mile).

Overhead lines are subject to more outages than underground lines per unit of length, but the outages are usually shorter in duration and repairs are relatively simple in comparison to repairs for underground lines.

There would be less overall visible impact since the line itself would be buried, but reactive support switching stations would have a visual impact. Each reactor support station would require from 2 to 4 hectares (5 to 10 acres) each. It is estimated that from 10 to 15 reactor stations would be required.

Complete clearing for the trenching equipment would be required. A trench about 1.2 meters (4 feet) wide and averaging 1.8 meters (6 feet) in depth would be dug along the alignment. Erosion would be likely on hillsides along the trench line. Installation of buried cable at river and stream crossings would cause increased sediment in the streams during the trenching, cofferdamming, and backfill phases of the work. Some blasting might be required along the route for subsurface rock removal. A special thermal backfill material would be required around the pipe encased cable to dissipate heat generated by the electric current in the cable. An all-weather access road capable of handling 18- to 27-metric-ton (20- to 30-short-ton) payloads would be required along the route as part of the 9.1-meter-wide (30-foot-wide) right-of-way necessary for construction and operation of the line.

It is possible to underground the equivalent of one span of the proposed transmission line for the Little Missouri River crossing without installing compensating reactive equipment. The line would be composed of 230-kv low pressure oil-filled cables requiring oil pumping equipment. In addition, two-fenced cable termination yards requiring pot heads and structures for terminating the cables, station-type lightning arresters for cable protection, disconnect switches, station service power for the oil pumping system and station lights would be constructed, along with spare cables in case of a cable failure. The span for this

^{34/} Bonneville Power Administration, The Role of the Bonneville Power Administration in the Pacific Northwest Power Supply System: Appendix B BPA Power Transmission System; Draft Program Environmental Statement and Planning Report, July 22, 1977.

proposed underground line would be approximately 1,500 feet long. The western river bank at the proposed crossing point has a very high and steep bank. This bank and associated incline would create potential landslide problems as well as requiring special routine O&M techniques for the life of the project. An underground river crossing also presents the danger of cables being washed out during periods of flooding and ice flows, and the potential of river contamination due to oil leaks. Additional short-term adverse affects due to installation construction, such as sedimentation from installation and removal of cofferdams etc., would also result. Initial cost of a submarine cable crossing would be approximately 15 times as much as an overhead crossing.

3. Alternate Terminal Point at South Dakota End of Line

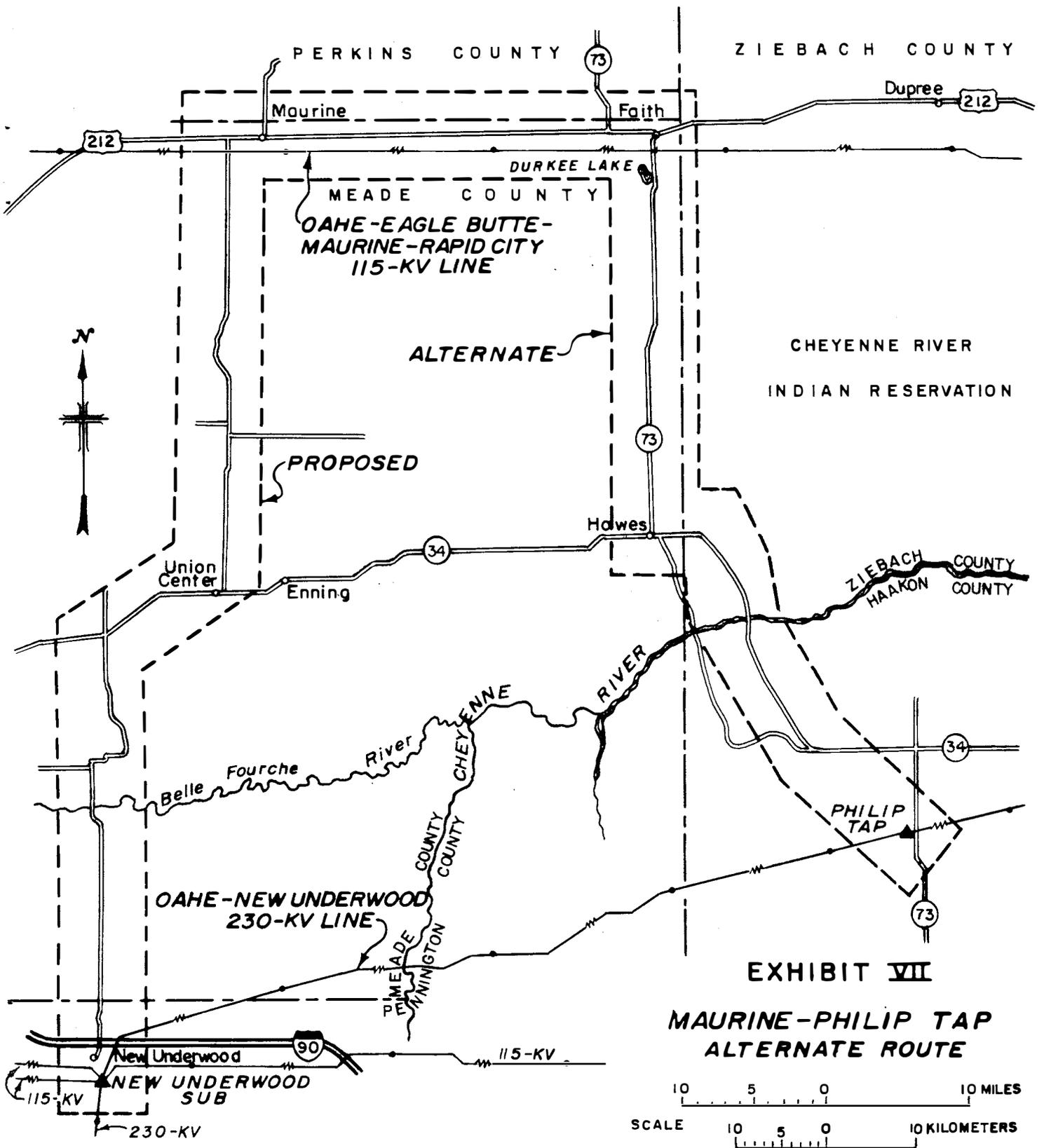
An alternate route from Maurine to Philip Tap in lieu of the proposed Maurine-New Underwood route was considered in the Miles City-New Underwood Transmission Study. ^{35/} A limited number of copies of this transmission study are available upon request. On the basis of this study either route would provide satisfactory performance for the interconnected transmission system.

The alinement from the Miles City-Baker-Hettinger-Maurine area was common to both routes. The alternate portions of the route were from the Maurine area to New Underwood Substation or the Maurine area to Philip Tap. The Maurine-Philip Tap alternate is 146.4 kilometers (91 miles) long which would be 20.9 kilometers (13 miles) longer than the proposed Maurine-New Underwood alternate. A map of the proposed alternate route is included as Exhibit VII.

Beginning at Maurine, the line goes straight east approximately 43.4 kilometers (27 miles) generally following U.S. Highway 212 to Faith. Near Faith the line turns and goes almost straight south for 45.1 kilometers (28 miles) paralleling State Highway 73 to Howes. From the Howes area, the line goes in a diagonal direction to the southeast for the remainder of the line to Philip Tap. About 49.9 kilometers (31 miles) of the diagonal line follows State Highway 34.

The Western Area Power Administration has an existing Oahe-Maurine-Rapid City 115-kv transmission line which parallels U.S. Highway 212 and is separated from the highway by a distance of about 1.6 kilometers (1 mile) in Meade County from the Maurine to Faith area. Where possible, the proposed alternate route would parallel the existing 115-kv line for 43.4 kilometers (27 miles) with a separation of 24.4 meters (80 feet). About 5.6 kilometers (3.5 miles) south of Faith, a locally maintained public park called Durkee Lake would be within the study area. About 4.8 kilometers (3 miles) east of Howes, the proposed line for the

^{35/} Western Area Power Administration, Basin Electric Power Cooperative and Montana-Dakota Utilities Co. Miles City-New Underwood Transmission Study, May 1978.



alternate route would enter Ziebach County and traverse about 12.9 kilometers (8 miles) through the Cheyenne River Indian Reservation. After crossing the Cheyenne River, the line enters Haakon County and would terminate at Philip Tap on the existing Oahe-New Underwood 230-kv transmission line. Philip Tap is about 32.2 kilometers (20 miles) north of Philip, South Dakota.

Easements for right-of-way on the alternate route to Philip Tap would require an additional 67 hectare (165 acres) over that needed for the route to New Underwood. Also, an additional 0.4 hectare (1 acre) would be taken out of agricultural production by using this alternate. The alternate portion of the line would be visible from U.S. Highway 212 or State Highway 34 or 73 for almost its entire length. The transmission line might be visible from the Durkee Lake public park area, but an effort would be made to route the line out of sight of the park. Some disturbance of the landscape, such as clearing, scars from tire tracks, and loss of agricultural production would occur during the 2-year field construction period. This alternate would have about 41.8 kilometers (26 miles) on a diagonal compared to 20.9 kilometers (13 miles) for the proposed New Underwood routing. Diagonal routing causes more interference with farming operations than lines which are placed in north-south or east-west directions. The rural population density, farming activities, and terrain are essentially the same as the proposed route.

Other items which were considered when selecting the New Underwood alternate route were that the substation 230-kv yard at New Underwood is now developed whereas a new 230-kv yard would be required at Philip Tap. There has been more electrical load developed between New Underwood and Maurine than there has between Philip Tap and Maurine. The selected transmission line routing would facilitate a possible future tap should area load growth between New Underwood and Maurine warrant such a connection.

4. Other Potential Alternate Routes

Other potential alternate routes were available, but were discarded early in the planning process for various reasons. An in-depth environmental analysis was not made on the potential alternates, but these routes are presented here with a reason for their rejection.

a. Direct Route From Miles City to New Underwood

This routing would be about 362 kilometers (225 miles) long and would have no intermediate terminal points. Almost the complete length of this alternate would be on a diagonal. The area traversed has few roads to provide access for construction and maintenance purposes which would increase environmental impacts.

Although no powerflow cases were run for this alternate, it is believed that this alternate would provide satisfactory performance for the interconnected Federal system. The need for a similar Yellowtail-Wyodak-New Underwood 230-kv line was indicated and subsequently recommended in Basin Electric Cooperative-Bureau of Reclamation Joint Planning Study No. 207 ^{36/}. Because of other short-term arrangements, which expire in 1981, the Yellowtail-New Underwood line was not built and has now been discarded.

Construction of a line directly to New Underwood would not provide reliability and support to the Baker, Bowman, Hettinger, and Bison areas. If the line on the direct route was provided, a duplicate line or lines would be required in the eastern Montana-western Dakota's area. To avoid unnecessary duplication of facilities, the alternate of using a direct route to New Underwood was rejected.

b. Miles City-Hettinger Portion of Line

Partial construction of only the Miles City-Hettinger part of the line was also considered. This alternate would be about 274 kilometers (170 miles) long and would have the same intermediate terminal points as that portion of the proposed line. The impacts for that portion of the proposed line would also apply for this alternate.

One stability case was run for this alternate. The results of this case indicated that the interconnected transmission system was still unstable for faults on the system. In order to attain system stability, it was necessary to continue the line onto New Underwood or Philip Tap, or provide duplicate facilities like the more direct route from Miles City to New Underwood. Since duplicate facilities would be required, this alternate was also rejected.

c. Upgrading Existing 115-kv Facilities

Montana-Dakota Utilities Co. has an existing 115-kv transmission line from Hettinger to Gascoyne, North Dakota. This line is about 33.8 kilometers (21 miles) long and is wood-pole H-frame construction. A comparison between the two transmission lines is as follows:

^{36/} Basin Electric Power Cooperative and the United States Bureau of Reclamation, Power Systems Engineering Report No. 207, August 1971.

	<u>Existing 115-kv line</u>	<u>Proposed 230-kv line</u>
Pole Spacing	4.3 meters (14 feet)	6.7 meters (22 feet)
Space Between Conductors	4.3 meters (14 feet)	6.7 meters (22 feet)
Minimum Ground Clearance	7.6 meters (25 feet)	7.9 meters (26 feet)
Conductor Diameter	1.8 centimeters (0.7 inches)	3.0 centimeters (1.2 inches)
No. of Insulators	7	12
Average Structure Height (Above Ground)	15.8-17.2 meters (52-56.5 feet)	20.0-21.3 meters (65.5-70 feet)

The existing line is only 4 or 5 years old and from the comparison between the two lines, it appears that a complete replacement of all poles, crossarms and conductors, would be necessary. This would also apply if the line were removed to use the right-of-way for the proposed 230-kv line.

If the line were replaced by the proposed 230-kv line, the poles, crossarms, and hardware could be salvaged and reused elsewhere. The conductors and overhead groundwires would probably be cut up and scrapped. The insulators could be reused on the new line or retained and used elsewhere. The existing poles are too light to serve the 230-kv line and would either have to be replaced or guyed. Time and material resources would be wasted if the line were replaced. The right-of-way would need to be widened, but there would be a savings in total right-of-ways needed for transmission purposes if only one line rather than two traversed the area. Visual impacts in this segment of the route would be reduced if only one line were present, but this is not believed to be significant. The proposed 230-kv transmission line has four times the transmission capacity of a 115-kv line.

Upgrading the existing Montana-Dakota Utilities Co. Hettinger-Gascoyne line to 230-kv would also require the additional construction of another major substation near Gascoyne to serve the coal mining operation there.

d. Miscellaneous Routing Within the Corridor (Study Area)

As discussed in section A.1.d., the centerline route has been selected within the study area based on minimizing various impacts. Significant alternative routes within the corridor which were given serious consideration are shown as dashed lines on Exhibit II-A and II-B. Considerations of each alternative route are discussed below:

(1) Miles City Alternate Routing

This alternative routing was considered in order to parallel 1.8 kilometers (1 1/8 miles) of existing electric transmission line corridor leaving the Miles City Substation to avoid a potential subdivision development. The alternative would decrease the portion of new transmission line corridor by 0.5 kilometers (0.3 miles) while increasing visibility of the line from Interstate 94 and U.S. Highway 12. This alternate transmission line route would pass through a water spread development, which has potential for future irrigation. It would also pass through and an established hay cropland. It would also pass through land more suitable for development of a subdivision because of the availability of an all-weather access road (Highway 12). This alternate route would increase the overall transmission line length by 1.2 kilometers (0.8 miles) and would require at least two additional guyed turning structures.

(2) Baker-Marmarth-Bowman-Gascoyne-Alternate Routing

This alternate route has no access roads for construction and future maintenance of the transmission line which makes it generally less suitable for either construction or maintenance than the proposed route. Also, the southern alternate site for the Bowman Substation was more suitable for development. This alternate route is 0.8 kilometers (0.5 miles) longer and because of the rougher terrain would require more access trails to individual structure sites, which increases the potential for erosion. This route would also require more special structures, such as, tension, angle and guyed structures which cause more interference to farming operations. This alternate would also cross potential irrigable land along the Little Missouri River and along Little Beaver Creek. South of Marmarth, the river valley broadens out and makes more land subject to future irrigation.

(3) Bison Alternate Routing

The alternate route near Bison crossed a larger amount of cultivated farm land. It is 3.1 kilometers (1.9 miles) longer and would have one less guyed turning structure. The proposed route will pass adjacent to the Grand Electric Cooperative's Bison Substation where an interconnection is planned as part of this project.

(4) Maurine Alternate Routing

The alternate route traversed is similar in terrain and land use. The alternative route is 2.8 kilometers (1.7 miles) longer and requires one additional guyed turning structure.

(5) Union Center Alternate Route

This alternate route was given early consideration. The proposed route was selected as a result of future road developments discussed at the County Commissioner meeting held on February 7, 1978. The alternate route is 2.5 kilometers longer and would have two less gayed turning structures.

CONSULTATION AND COORDINATION

1. Consultation and Coordination During Development of the Proposal and During Preparation of Draft Environmental Statement.

Information on potential areas of conflict with wildlife was solicited from the Montana, North Dakota, and South Dakota Fish and Wildlife agencies. The North Dakota Game and Fish Department advised that the most direct route paralleling U.S. Highway 12, which would minimize construction of access roads in the environmentally sensitive "Badlands" portion of the route, would be preferred. The Montana Department of Fish and Game requested only that the route stay out of timbered areas along the Yellowstone River.

By letter of December 27, 1977, the North Dakota Public Service Commission provided a copy of the North Dakota Energy Conversion and Transmission Facility Siting Act and the accompanying Rules and Regulations.

By letter of January 4, 1978, the Roosevelt-Custer Regional Council for Development in North Dakota had several general questions about the line through their planning area. These concerns are covered in the Environmental Impact Statement.

By letter of January 6, 1978, the Adams County Auditor inquired about the availability of service to the communities of Adams County, North Dakota, from the proposed 230-kv transmission line.

A meeting was held on January 12, 1978, with the Forest Service (Billings office). The Forest Service provided information about Forest Service lands in North and South Dakota that are within the study area. The Little Missouri National Grasslands and the Grand River National Grasslands are administered by the Forest Service.

The North Dakota State Planning Division circulated the notice of the proposed line to various state agencies and by letter of January 20, 1978, provided a copy of their replies. The North Dakota State Highway Department provided information about planned improvements for U.S. Highway 12. The North Dakota Department of Health advised that they were reviewing a study regarding possible ozone production from high-voltage transmission lines. The State Land Department of North Dakota advised that the State of North Dakota is entitled to just compensation for the taking, use, or alteration of any state-owned land.

The Fifth District Planning and Development Commission of South Dakota advised by letter of January 16, 1978, that they do not feel there are serious problems for this line. They also advised that they contacted the Perkins County Commissioners and the Perkins County Planning Commission and that they indicated there is a need for the line.

Information meetings were held during January, February, and March of 1978 with various County Commissioners to discuss the purpose of the project, construction techniques, right-of-way acquisition, land-owner meetings, local restraints, and environmental aspects associated with the proposed 230-kv transmission line project. The County Commissioner meetings were as follows:

1. Custer County Commissioners, at Miles City, Montana, January 24, 1978.
2. Fallon County Commissioners, at Baker, Montana, January 23, 1978.
3. Adams County Commissioners, at Hettinger, North Dakota, March 7, 1978.
4. Bowman County Commissioners, at Bowman, North Dakota, January 25, 1978.
5. Meade County Commissioners, at Sturgis, South Dakota, February 7, 1978.
6. Pennington County Commissioners, at Rapid City, South Dakota, February 7, 1978.
7. Perkins County Commissioners, at Bison, South Dakota, March 7, 1978.

Due to snow and blizzard conditions, the meeting with the Slope County Commissioners, at Amidon, North Dakota, was canceled.

Montana-Dakota Utilities Co. (MDU) met with the Bowman County Commissioners on October 17, 1978, since the January 25, 1978, meeting was only attended by one County Commissioner who has since retired. MDU also met with the Slope County Commissioners on December 5, 1978. Since the meeting scheduled by WAPA was canceled.

Information meetings with landowners along the proposed route were also held. These landowner meetings were coordinated through the local county extension agents. These meetings were held to inform the landowners of all aspects of the proposed project and to advise them that they would be contacted for right-of-entry permits for preliminary survey work, cultural resource surveys, geological surveys, and to gather additional information as to avoidance areas, planned farming operations, etc.

Landowner meetings have been held during April 1978 in the following South Dakota communities:

1. New Underwood, South Dakota, April 4, 1978.
2. Union Center, South Dakota, April 5, 1978.
3. Bison, South Dakota, April 6, 1978.

Landowner meetings have been held during May 1978 in the following Montana and North Dakota communities:

1. Miles City, Montana, May 1, 1978.
2. Baker, Montana, May 2, 1978.
3. Bowman, North Dakota, May 3, 1978.
4. Hettinger, North Dakota, May 4, 1978.

A meeting was held in Billings on March 30, 1978, with the Bureau of Land Management and Western Area Power Administration. The purpose of the meeting was to discuss the proposed transmission line corridor and environmental issues regarding public lands within the corridor that are administered by the Bureau of Land Management. A second meeting was held in Miles City on April 7, 1978, at the Bureau of Land Management District Office to further coordinate placement of the line on some parcels of public lands.

Local area newspapers in Miles City, Hettinger, and Bismarck published informational articles describing the project, explaining its need and the proposed corridor.

The State Conservationist with the Soil Conservation Service in the states of Montana, North Dakota, and South Dakota were contacted in regard to location of "prime farmlands" within the proposed transmission line corridor.

2. Coordination During Review of the Draft Environmental Statement

Copies of the draft environmental statement were mailed to the entities listed on the summary sheet. The draft statement was made available for public review at county courthouses and public libraries in counties in which the project works are located. Single copies of the draft environmental statement were available upon request at the following locations:

James D. Davies
Area Manager
Western Area Power Administration
Department of Energy
P.O. Box EGY
Billings, Montana 59101
Telephone: 406-657-6532

Mr. Robert Stern
Office of NEPA Affairs
Department of Energy
1200 Pennsylvania Avenue N.W.
Room 7119
Washington, D.C. 20461
Telephone: 202-566-9760

Comments received from reviewers were generally favorable. The need for the line was not questioned. Concern was expressed in regard to the line location near Marmarth and Miles City area as well as the crossing point of the Little Missouri River. Additional information and clarification was required for most of the comments.

Appendix A shows the letters of comment received during the comment period. Each comment was considered during the preparation of this final environmental statement. The responses to the comments, where needed, are also shown in Appendix A.

Public hearings on the Draft Environmental Statement were held in Miles City, Montana, November 14, 1978; Hettinger, North Dakota, November 15, 1978; and Bison, South Dakota, November 16, 1978. Notice of the public hearings was printed in the Federal Register on October 30, 1978. A news release dated October 27, 1978, announcing the hearings, was sent to all known news media in Montana, North Dakota, and South Dakota. Notice of the Miles City hearing was also announced in the Billings Gazette. All three hearing records were held open until November 22, 1978, so that written comments from those unable to attend and from those wishing to supplement their oral presentations could be included.

Total attendance at the hearings was approximately 35 to 40. Testimony received generally related to questions on right-of-way acquisition, the effect of a Government transmission line easement on oil, mineral and coal resources, and exact line locations. No written comments were submitted.

A list of the individuals providing oral comments for each public hearing is as follows:

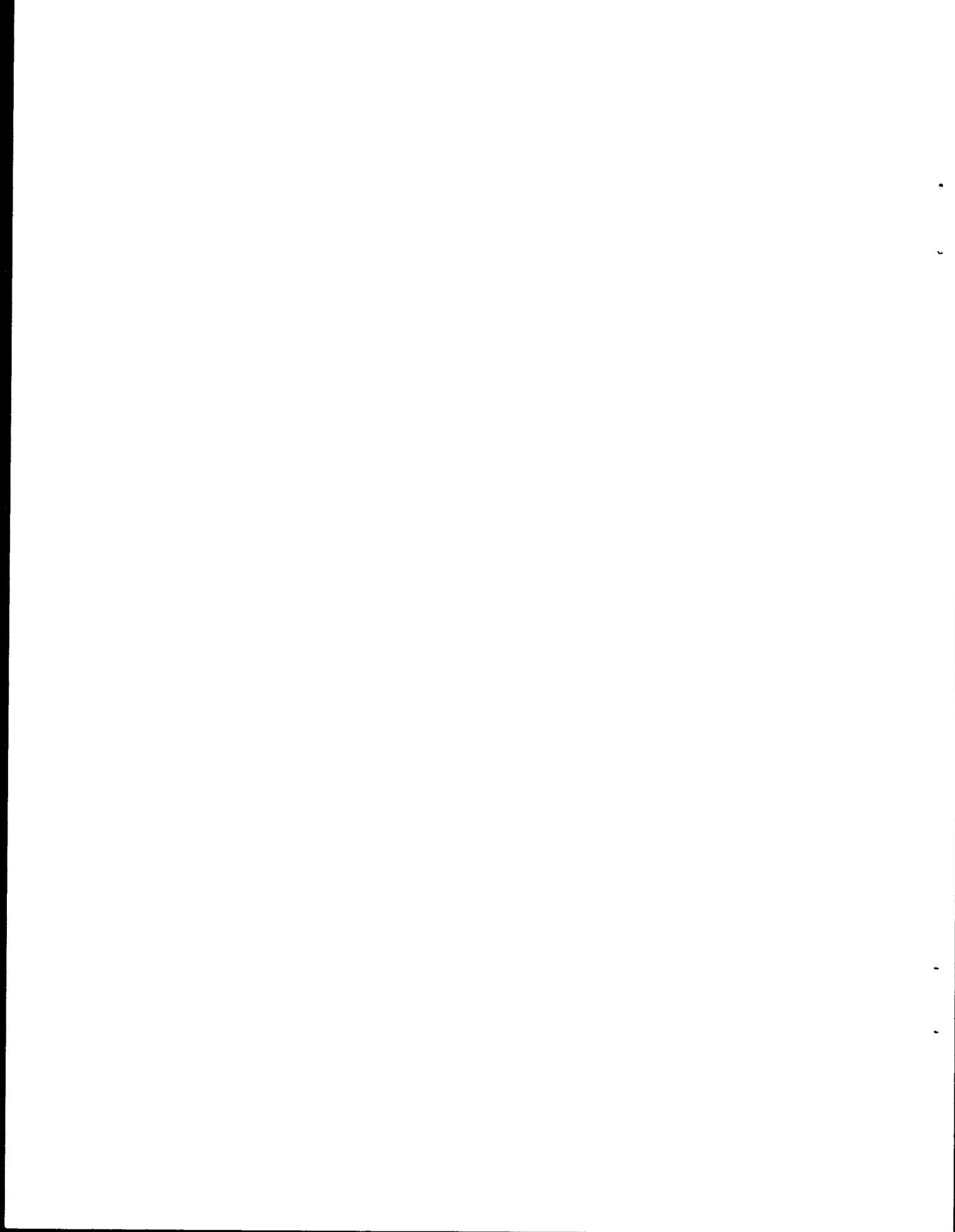
Public Hearing - Miles City, Montana
Leonard Roberts
John Beardsley
Lawrence Steffes

Public Hearing - Hettinger, North Dakota
Norlen Torgerson
L. A. Stolzenberg
Rod Landbloom

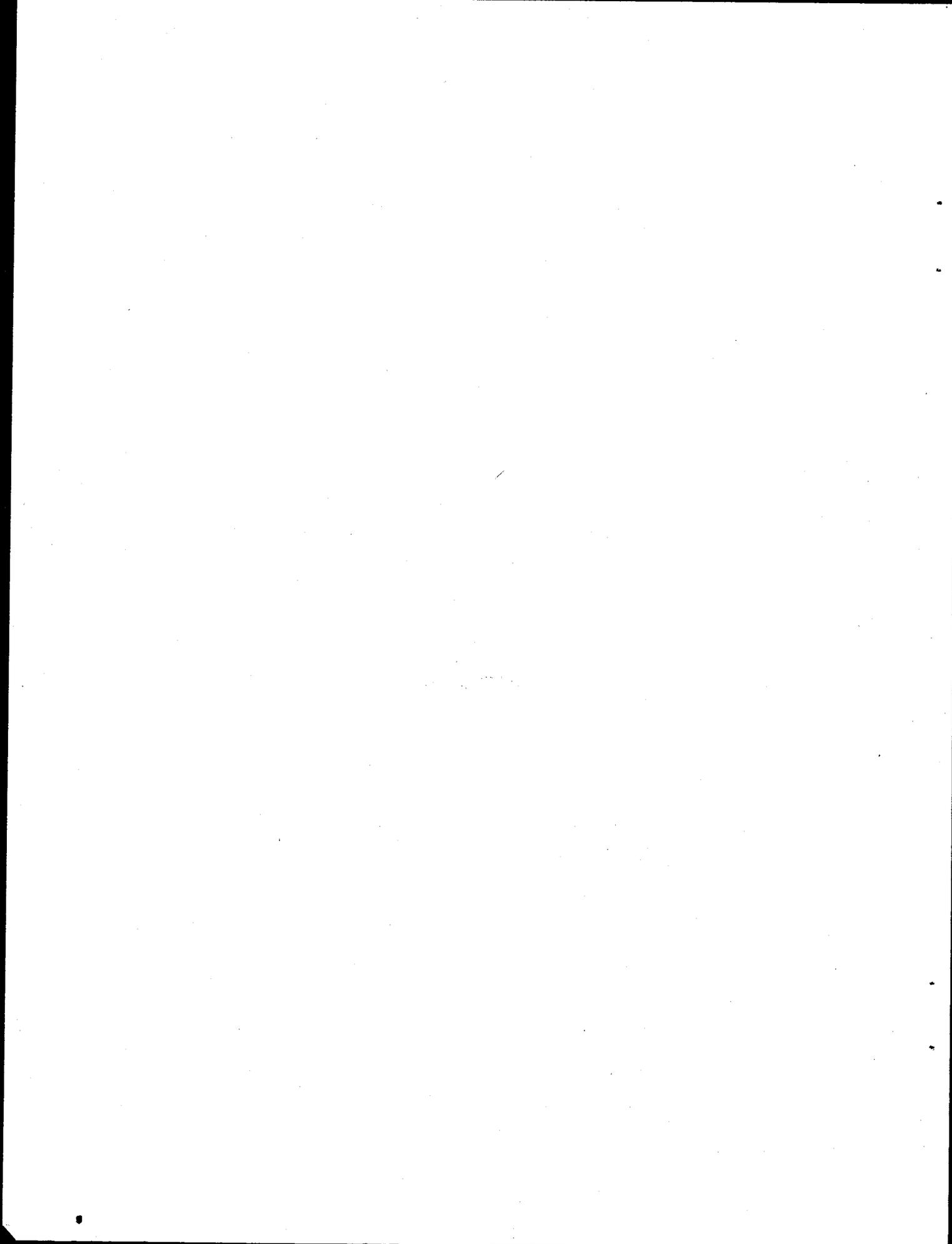
Public Hearing - Bison, South Dakota
L. A. Stolzenberg
Hubert Adcock
Merle Bastian
Albert Hoff

Copies of the public hearing records are available for public inspection at the Department of Energy Public Document Rooms located at Library, Department of Energy, Room 1223, 20 Massachusetts Avenue Northwest, Washington, D.C.; Department of Energy, Room GA, 152 Forrestal Building, 1000 Independence Avenue Southwest, Washington, D.C.; Office of Budget and Program Planning, Helena, Montana; North Dakota State Planning Division, Bismarck, North Dakota; South Dakota State Planning Bureau, Pierre, South Dakota; Roosevelt-Custer Regional Council for Development, Dickinson, North Dakota; Fifth Planning and Development District, Pierre, South Dakota; Sixth Planning and Development District, Rapid City, South Dakota; and Public Libraries in Miles City and Baker, Montana; Amidon, Bowman, and Hettinger, North Dakota; and Bison, Sturgis, and Rapid City, South Dakota. The record includes a transcript of all oral testimony submitted for the record.

Appendix B is a summary of the comments presented at the public hearings and WAPA's responses to these comments.



APPENDIX A



Advisory
Council On
Historic
Preservation

1522 K Street NW
Washington D.C.
20005

OFFICIAL FILE COPY

JAN 9 1979

RECEIVED

December 28, 1978

Mr. James D. Davies
Area Manager
Western Area Power Administration
U.S. Department of Energy
P. O. Box EGY
Billings, Montana 59101

Dear Mr. Davies:

This is to acknowledge receipt of the draft environmental statement for the Miles City-New Underwood 230-Kv Electrical Transmission Line, Montana, North Dakota and South Dakota on October 5, 1978. We regret that we will be unable to review and comment on this document in a timely manner pursuant to Section 102(2)(C) of the National Environmental Policy Act of 1969.

Nevertheless, the Department of Energy is reminded that, if the proposed undertaking will affect properties included in or eligible for inclusion in the National Register of Historic Places, it is required by Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. 470f, as amended, 90 Stat. 1320) to afford the Council an opportunity to comment on the undertaking prior to the approval of the expenditure of any Federal funds or prior to the issuance of any license. The "Procedures for the Protection of Historic and Cultural Properties" (36 CFR Part 800.4) detail the steps an agency is to follow in requesting Council comment.

Generally, the Council considers environmental evaluations to be adequate when they contain evidence of compliance with Section 106 of the National Historic Preservation Act, as amended. The environmental documentation must demonstrate that either of the following conditions exists:

1. No properties included in or that may be eligible for inclusion in the National Register of Historic

WESTERN AREA POWER ADMINISTRATION RESPONSE

The WAPA is aware of its responsibilities under Section 106 of the NHPA of 1966. The Draft EIS identified a corridor within which the transmission line would be located. Based on several factors, a more definitive alignment has been selected and is shown on the final EIS

A cultural resources survey is in progress by Anthro Research Inc. and the results will be made known to the appropriate State Historic Preservation Office of Montana, North Dakota and South Dakota as well as the Advisory Council. If cultural resources are found that are of National Register Quality, then appropriate consultation will be made.

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B2200

Page 2
Mr. James D. Davies
Miles City-New Underwood
December 28, 1978

Places are located within the area of environmental impact, and the undertaking will not affect any such property. In making this determination, the Council requires:

--evidence that the agency has consulted the latest edition of the National Register (Federal Register, February 7, 1978, and its monthly supplements);

--evidence of an effort to ensure the identification of properties eligible for inclusion in the National Register, including evidence of contact with the State Historic Preservation Officer, whose comments should be included in the final environmental statement.

2. Properties included in or that may be eligible for inclusion in the National Register are located within the area of environmental impact, and the undertaking will or will not affect any such property. In cases where there will be an effect, the final environmental statement should contain evidence of compliance with Section 106 of the National Historic Preservation Act through the Council's "Procedures for the Protection of Historic and Cultural Properties".

Should you have any questions, please call Brit Allan Storey at (303) 234-4946, an FTS number.

Sincerely,



Louis S. Wall
Assistant Director
Office of Review and Compliance, Denver

UNITED STATES DEPARTMENT OF AGRICULTURE
RURAL ELECTRIFICATION ADMINISTRATION
WASHINGTON, D.C. 20250

WESTERN AREA POWER ADMINISTRATION RESPONSE

SUBJECT: Draft Environmental Impact Statement for
the Miles City - New Underwood 230 kV
Transmission Line, DOE/EIS-0025-D

TO: Mr. James D. Davies, Area Manager
Western Area Power Administration
Department of Energy
P. O. Box EGY
Billings, Montana 59101

RECEIVED
NOV 12 1978

*Ed
B. L...*

As requested by your letter dated September 27, 1978, we have reviewed the subject document and this letter constitutes our comments.

It is our understanding that the Western Area Power Administration, U.S. Department of Energy is the "lead agency" and that REA is a "cooperating agency" in the EIS development for the subject project. REA intends to use the final version of this document for fulfilling its requirements of the National Environmental Policy Act. REA may become involved in the project through the guaranteeing of loan funds for Basin Electric Power Cooperative's portion of the project. We, therefore, require that mention of REA's Federal action be made in the forthcoming Federal Register notice regarding the availability of the Final Environmental Impact Statement. We also request that your office send a copy of the preliminary final EIS for review to the undersigned prior to dissemination of the document for formal review.

We offer the following comments:

a) Threatened or endangered species - You must clearly establish whether or not there will be an effect to threatened or endangered plant and animal species that may utilize the project area, regardless of frequency. The citing of results of a survey or study performed in this regard would be beneficial. If you cannot arrive at the conclusion that the project will cause "no effect" on listed threatened or endangered species, then a Section 7 consultation with the U.S. Fish and Wildlife Service is required.

b) Historic or archeological sites - In reference to Section B.7, we request the appropriate State Historic Preservation Officers be solicited for their professional judgment regarding the effect of the proposed project on the properties listed or eligible for listing in the National Register. If you cannot conclude, in consultation with the appropriate SHPO, that the project will have "no effect" upon listed or eligible for listing properties, then you must comply with the requirements of "Procedures for the Protection of Historic and Cultural Properties," 35 CFR 800.

Section A2a of the Draft EIS acknowledged the participation of REA in this project. Section A1a of this final EIS makes the same acknowledgement. The Federal Register Notice for this final EIS also acknowledges REA participation. It is our understanding that REA will publish its own Federal Register Notice of Availability after the EIS has been filed with EPA.

Preliminary findings of the draft EIS indicated little or no effect of the line on endangered species. In their letter of December 12, 1978, the Department of the Interior (included in this appendix) advised that there may be additional endangered or threatened species in the study area. WAPA is making informal contacts with the U.S. Fish and Wildlife Service to advise them of the proposed alignment and whether or not in their opinion there will be impacts to endangered species as a result of construction of this line.

WAPA agrees with this comment. Sections D.2.a(3) and D.4.a of the final EIS has been expanded to further indicate how WAPA will comply with Section 10c of the National Historic Preservation Act. See also responses to comments from the Advisory Council on Historic Preservation, letter dated December 28, 1978.

Mr. James D. Davies

2

c) Prime and unique farmland - Pursuant to the Secretary of Agriculture's Memorandum No. 1827 - Statement on Land Use Policy (copy enclosed), the use of prime and unique farmland must be avoided to the extent practicable and, where not practicable, these lands must be identified, and the adverse impacts must be described and minimized. The appropriate State Conservationist can assist you in identifying prime and unique farmland.

d) Wetlands and flood plain - Pursuant to Executive Orders 11990 and 11988, respectively, consideration must be given to wetlands and flood plain as they pertain to the proposed project. These quantities must be identified to the extent that they may be affected by the proposed project. Wetlands and flood plain are to be avoided to the extent practicable. If it is found that no practicable alternative exists, then you must list the ways that the project will be designed or modified to minimize harm to these quantities. The preceding would most expeditiously be accomplished through written consultation with the U.S. Fish and Wildlife Service, at the regional level, and the U.S. Corps of Engineers, at the district level.

e) Alternatives to the proposed transmission line corridor - The subject EIS must include discussion of all reasonable alternatives to the environmentally preferable alternative, in this case the proposed corridor, as well as to the proposed action. These alternatives must be considered in detail so that reviewers may evaluate the comparative merits. Alternatives which were eliminated from detailed study must be discussed along with the reasons for their elimination. It is worth noting that, in these discussions, the impact on mechanical irrigation must be discussed.

It is requested that copies of correspondence addressed to the entities mentioned in above items (a) through (d) be forwarded to this office. Should you have need for further information in the above regards, or for points of contact, please feel free to contact our Environmental Services Branch by letter, or telephone Mr. Thomas F. Papsidero, at 202 447-3446.

We appreciate the opportunity to comment on this draft environmental statement.



FRANK W. BENNETT
Director
North Central Area - Electric

Enclosure

In the North Dakota portion of the line, one parcel of prime farmland is crossed by the transmission line. At most, this crossing will include the placement of 3 structures on this parcel of land.

Section C1 of the draft EIS indicated that the line will cross floodplains of 6 rivers. Pursuant to Executive Order 11988, WAPA will avoid constructing new facilities within 100 year floodplains unless there is no practicable alternative. For actions that are proposed to take place within a floodplain, WAPA will follow the procedures outlined in the floodplain/wetlands regulations of the Department of Energy at 10 CFR 1022. If there is no practicable alternative to location in the floodplain, WAPA will assure that the action is designed and modified so as to minimize potential harm to or within the floodplain. WAPA will also evaluate the proposal with respect to its conformity to applicable State or local floodplain protection standards.

Section H3 of the draft EIS discussed these alternative alignments that were feasible. The proposed alignments presented in this final EIS will not cross any irrigated lands and so there should be no effect on mechanical irrigation techniques. The line will, to some extent, limit future use of mechanical sprinklers but the severity of that impact is unknown.

SECRETARY'S MEMORANDUM NO. 1827, REVISED

Statement on Land-Use Policy

1. PURPOSE. This memorandum establishes a departmental policy to promote attainment of land use objectives that are responsive to the needs of the people. This policy is supportive of the constitutional responsibilities of State and local governments for making and implementing public policy regarding land use. This policy is designed to contribute to improved social and economic well-being and to protect the quality of the environment. In formulating and implementing this policy, it is the intent of the Department to (a) assist local and State governments and individual landholders in defining and meeting needs for growth and development; (b) protect the natural environment; and (c) assure adequate supplies of high quality food, fiber, wood, and water.

We believe those are policy statements and do not require a response.

A-5
The policy is supportive of the President's Urban Policy, Executive Order 11990, Protection of Wetlands, and Executive Order 11988, Floodplain Management, and is consistent with responsibilities assigned the Secretary under the provisions of 7 U.S.C. 1010 and 7 U.S.C. 2204.

2. BACKGROUND. Environmental, economic, and social needs and related land use decisions are matters of concern to the Department of Agriculture. Decisions concerning land use arise from needs to maintain and stimulate economic development, maintain and enhance agricultural, rangeland, and forest production capabilities, provide or improve community services, facilities, and living space, to preserve the natural environment and associated wildlife and recreational values, and to assure adequate supplies of high quality water. These needs are highly interdependent and often competitive for the limited supply of available and suitable land. Responsible levels of Government must encourage and facilitate the use of our Nation's land resources with wisdom and foresight.

The Department of Agriculture has numerous programs, and makes decisions, that affect the use and availability of land in public and private ownership. To help carry out these programs, the Department has established a program delivery capability at the local level and cooperative arrangements with State and local governments. The

Department has the organizational structure, leadership capability, and the professional and technical skills essential to advise and assist local and State governments and private landholders in matters dealing with the Nation's land resources. In accordance with the authority contained in 7 U.S.C. 1010 and 7 U.S.C. 2201 and consistent with 7 C.F.R. 2.19(f), the Department sets forth this statement of policy on land use. This statement reflects the Department's concern with the serious challenges the Nation faces in retaining an adequate natural resource base and in meeting environmental, social, and economic needs.

3. POLICY. The Department will:

- A. Continue to recognize and respect the rights and responsibilities of landholders in making private land use decisions, and the rights and responsibilities of State and local governments in developing public policies regarding non-Federal land use.
- B. Implement this policy in the administration of its public lands consistent with legislative authorities controlling their use. They will be administered in such manner as to demonstrate leadership in meeting short- and long-term needs for growth and development; to protect the natural environment; and to assure adequate supplies of food, fiber, wood, and water.
- C. Manage USDA administered lands with a sensitivity to the effect which their management will have on adjacent private and public land. Whenever logical, the management of these lands should be coordinated with the management of adjacent private and other public lands.
- D. Make decisions and manage its land use-related programs to contribute to the Nation's short- and long-range needs for protecting the natural environment; assuring adequate supplies of food, fiber, wood, and water; and providing for economic growth and development, energy and other facilities and services, and living space in our communities.
- E. Assist local and State governments, planning and development organizations or agencies, citizens' groups, and individual landholders in identifying and defining their growth, development, and environmental needs; selecting and choosing among alternatives to meet those needs; and implementing projects or programs to satisfy those needs.
- F. Advocate the retention of Important Farmlands and Forestlands, Prime Rangeland, Wetlands, or other lands designated by State or local governments whenever proposed conversions are:
 - (1) caused or encouraged by actions or programs of a Federal agency;
 - (2) licensed by or require approval by a Federal agency;
 - or (3) inconsistent with local or State government plans.Provisions will be sought to assure that such lands are not

irreversibly converted to other uses unless other national interests override the importance of preservation or otherwise outweigh the environmental benefits derived from their protection. In addition, the preservation of farmland in general provides the benefits of open space, protection of scenery, wildlife habitat and, in some cases, recreation opportunities, and controls on urban sprawl.

- G. Advocate actions that reduce the risk of flood loss, minimize impacts of floods on human safety, health, welfare, and restore and preserve the natural and beneficial functions and values of flood plains.
- H. Advocate and assist in the reclamation of abandoned surface mined lands and in planning for the extraction of coal and other non-renewable resources in such manner as to facilitate restoration that will reestablish the prior productivity of the land, as mining is completed in defined areas or sites.
- I. Advocate the protection of threatened and endangered animal and plant species and their habitats, designated archaeological, historic, and cultural sites, and designated ecosystems.
- J. Advocate the conservation of natural and man-made scenic resources, improve the technical ability of agencies to identify and evaluate scenic resources, and assure that its agencies protect and enhance the visual quality of the landscape.

4. IMPLEMENTATION.

- A. Each agency of the Department having programs or actions that may cause or encourage irreversible conversions of Important Farmlands and Forestlands, Prime Rangeland, and Wetlands, as defined in the Appendix, or that may cause or encourage encroachments on flood plains, will review such programs or actions and related administrative rules, regulations, bulletins, and practices. Within one year these agencies will make such changes as are necessary to bring agency programs or actions into compliance with the provisions of this Memorandum.

Agencies will assure that their actions, investments, and programs on non-Federal lands are consistent with State and local land use plans and programs to the extent practicable.

In carrying out the above, agencies will:

- (1) cooperate to establish a coordinated land use data base and coordinated data collection systems for use within the Department and by the Federal, State, and local governments;

(2) attempt to integrate departmental and State and local land use policies and programs;

(3) identify and minimize to the extent practicable adverse environmental, economic, and social effects of agency projects and programs;

(4) provide landholders and other concerned people information about the alternatives to, and the associated environmental, social, and economic implications of proposed actions;

(5) refrain from converting or enabling others to irreversibly convert these lands or encroaching or enabling other encroachments on flood plains unless there are no practicable alternatives.

B. The Department will intercede, consistent with the policy contained in this Memorandum, in decisionmaking by other Federal agencies where conversions of Important Farmlands and Forestlands, Prime Rangeland, and Wetlands, are caused or enabled by an agency of the Federal Government, or where conversions require Federal licensing or approval. Intercession will be through participation in the planning of projects when invited and through review and comment on draft environmental impact statements or proposals for actions of Federal agencies consistent with authorized administrative review procedures for Federal or Federally assisted actions.

C. The Department will encourage State and local governments and individual landholders to retain Important Farmlands and Forestlands, Prime Rangeland, and Wetlands, and avoid encroachment on flood plains.

The Department will:

(1) generate and disseminate information and provide organizational, leadership, planning, and technical assistance in the application of knowledge useful to local or State officials, groups, or individual landholders in understanding the social, economic, and environmental implications of converting such lands;

(2) provide assistance to State, area-wide, and local planning and development groups, citizens groups, and individual landholders in evaluating alternative uses for land. Evaluations will consider soil suitability based on physical and chemical characteristics, site (location and adjacent uses), and other environmental, economic, and social factors;

(3) cooperate with others in defining, inventorying, evaluating, and publishing descriptions of the Nation's lands, including

wetlands and flood plains, consistent with legislative and administrative authorities;

(4) provide decisionmakers and the general public with information on the kind, extent, location, ownership, and current status of the Nation's lands;

(5) conduct multidisciplinary land use research that is responsive to identified State, local, and national needs;

(6) conduct educational programs on land use and land use research findings;

(7) encourage and facilitate public participation in land use planning and decisionmaking;

(8) cooperate with local, State and other Federal agencies in locating and evaluating sites for:

- a. extracting minerals and nonrenewable energy resources and the reclamation of surface mined lands;
- b. energy-producing facilities;
- c. economic growth and development;
- d. facilities and services in local communities;

to limit adverse environmental impacts of these activities or to find alternatives to the conversion of Important Farmlands and Forestlands, Prime Rangeland, and Wetlands;

(9) cooperate with area-wide and State clearinghouses designated under the provisions of OMB Circular A-95 in the review of Federally aided projects with potential impacts on Important Farmlands and Forestlands, Prime Rangeland, and Wetlands.

- D. The USDA Land Use Committee, created under Secretary's Memorandum No. 1807, Revised, dated December 14, 1977, will provide Department-wide leadership for the implementation of this policy statement. The Committee will encourage and monitor USDA agency responses and coordinate with other Federal agencies to carry out the provisions of this Memorandum. The Committee will advise the Secretary annually as to progress in the implementation of this policy.

This Memorandum supercedes Secretary's Memorandum No. 1827, dated October 26, 1973, and Supplement No. 1, dated June 21, 1976.

Secretary of Agriculture

APPENDIX

DEFINITIONS

The following definitions apply to the provisions of Secretary's Memorandum No. 1827, Revised.

IMPORTANT FARMLANDS ^{1/}

Prime farmlands

Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these (the land could be cropland, pastureland, rangeland, forest land, or other land, but not urban built-up land or water).

In addition to the criteria above, for purposes of this policy statement, site (location and adjacent uses) and other economic and social factors will be given due consideration.

Unique farmland

Unique farmland is land other than prime farmland that is used for the production of specific high value food and fiber crops. It has the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high quality and/or high yields of specific crops when treated and managed according to acceptable farming methods. Examples of such crops are citrus, tree nuts, olives, cranberries, fruit, and vegetables.

Additional farmland of statewide importance

This is land, in addition to prime and unique farmlands, that is of statewide importance for the production of food, feed, fiber, forage, and oilseed crops. Criteria for defining and delineating this land are to be determined by the appropriate State agency or agencies.

Additional farmland of local importance

In some local areas, there is concern for certain additional farmlands for the production of food, feed, fiber, forage, and oilseed crops, even though these lands are not identified as having national or statewide importance. Where appropriate, these lands are to be identified by the local agency or agencies concerned.

^{1/} USDA's Important Farmland Inventory, 7 CFR, Part 657.5

PRIME FORESTLANDS ^{2/}

Because of the multiple-use of forested lands, several categories, i.e., timber, wildlife, and recreation may be developed. For purposes of this Memorandum only, the following timberland definitions will apply.

Prime timberland

Prime timberland is land that has soil capable of growing wood at the rate of 85-cubic feet or more/acre/year culmination of mean annual increment (site 3 or better) in natural stands and is not in urban or built-up land uses or water. Generally speaking, this is land currently in forest, but does not exclude qualifying lands that could realistically be returned to forest.

Unique timberland

Unique timberlands are lands which do not qualify as prime timberland on the basis of producing less than 85-cubic feet/acre/year, but are growing sustained yields of specific high value species or species capable of producing specialized wood products under a silvicultural system that maintains soil productivity and protects water quality.

Timberland of Statewide importance

This is land, in addition to prime and unique timberlands, that is of Statewide importance for the growing of wood. Criteria for defining and delineating these lands to be determined by State forestry planning committees or appropriate State organizations.

Timberland of local importance

In some local areas, there is concern for certain additional forest lands for the growing of wood even though these lands are not identified as having national or Statewide importance. Where appropriate, these lands are to be identified by a local agency or agencies concerned.

PRIME RANGELAND ^{3/}

Prime rangeland is rangeland which because of its soil, climate, topography, vegetation, and location has the highest quality or value for grazing animals. The (potential) natural vegetation is palatable, nutritious, and available to the kinds of herbivores common to the area.

^{2/} Prime Forest Land Definition and Criteria, USFS, May 26, 1977

^{3/} Draft USDA Definitions (for intra-departmental use only).

Because of the kind, quality, or seasonal characteristics of the forage produced on it, prime rangeland makes a significant contribution to the range livestock industry of the area and exerts a profound influence on well-being of local communities. Prudent grazing can be accomplished without significant degradation of the environment.

WETLANDS ^{4/}

Wetlands means those areas that are inundated by surface or ground water with a frequency sufficient to support and under normal circumstances does or would support a prevalence of vegetable or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, river overflows, mudflats, and natural ponds.

Other farm, forest, range, or wetlands designated for protection by State or local governments.

Those lands, defined and identified by State or local jurisdictions or regional governing bodies which are of substantial importance to them. The importance might stem from the lands siting, economic, environmental, open space, or other values.

OTHER TERMS

Flood plains ^{5/}

The term "flood plain" shall mean the lowland and relatively flat areas adjoining inland and coastal waters including floodprone areas of offshore islands, including at a minimum, that area subject to a one-percent or greater chance of flooding in any given year.

Food, fiber, and wood

Food, fiber, and wood are the production of food, feed, forage, fiber, oilseed, ornamental plant materials, and wood for all purposes, including seed production and planting stock.

^{4/} Executive Order 11990, Protection of Wetlands, May 24, 1977

^{5/} Executive Order 11988, Floodplain Management, May 24, 1977



DEPARTMENT OF AGRICULTURE
OFFICE OF THE SECRETARY
WASHINGTON, D. C. 20250

SECRETARY'S MEMORANDUM NO. 1827, REVISED
SUPPLEMENT NO. 1

Implementation of Executive Orders
11988, Flood Plain Management and
11990, Protection of Wetlands

BACKGROUND

Two Executive Orders were issued in May of 1977 as important components of the President's message on the environment. These Orders require all executive agencies to avoid disrupting wetlands or flood plains wherever there are practicable alternatives in delivering their programs and to minimize any environmental harm that might be caused by Federal actions where no practicable alternatives exist. The Orders require executive agencies to establish procedures for compliance. Specifically, executive agencies are required to issue or amend program regulations and procedures and to incorporate the provisions of the Executive Orders into agency planning and decisionmaking. Executive agencies are required to assure that consideration for wetlands and flood plains will be part of existing programs and will not cause unnecessary duplication or delay in government operations.

Scope of USDA Programs Covered

Land use related programs of the following Administrations and Services are subject to the Orders' directives: Soil Conservation Service; Science and Education Administration; Rural Electrification Administration; Forest Service; Farmers Home Administration; Agricultural Stabilization and Conservation Service; and the Economics, Statistics, and Cooperatives Services.

Directives

1. The Soil Conservation Service, the Agricultural Stabilization and Conservation Service, the Forest Service, the Rural Electrification Administration, and the Farmers Home Administration will identify and review, and make necessary changes in their respective regulations and rules for all programs that may cause conversions of wetlands or which might enable others to convert wetlands to alternative uses, or that may cause or enable others to cause the construction of encroachments on flood plains. Such changes as necessary to comply with Executive Orders 11988 and 11990 shall be made by November 1, 1978.

2. Those services and administrations listed above, together with the Science and Education Administration, and the Economics, Statistics, and Cooperatives Service will identify and review and make necessary changes in these programs that may indirectly affect flood plains or wetlands by influencing decisions made by local and State government officials, planning and development organizations or agencies, or individual firms and landholders. In conducting these programs, increased attention will be given to:

- A. Generating and disseminating knowledge and providing technical assistance in the application of knowledge that may be useful to local and State government officials, planning and development groups or agencies, or individual firms and landholders in understanding the natural and beneficial functions and values of wetlands and flood plains and in preserving and utilizing such lands.
- B. Assisting State and local governing officials, planning and development groups or agencies, and individual firms and landholders to identify and study the feasibility of, and to implement, alternatives to converting or encroaching on flood plains in meeting their growth and development needs.

3. All affected services and administrations will utilize the systematic, interdisciplinary approach for the identification of environmental impacts of all actions on or affecting wetlands as contained in the National Environmental Protection Act of 1969, Section 102(2)(c). To the extent practicable, the decisionmaking process contained in Part II, Floodplain Management Guidelines for Implementing Executive Order 11526 (43 FR 6030, dated February 10, 1978) will be utilized.

4. All affected services and administrations will identify, define, specify, and propose remedies for any legal, legislative, or other constraints that limit the agency's capacity to comply fully with the provisions of these Executive Orders.

5. The Department of Agriculture's Land Use Committee, created under the provisions of Secretary's Memorandum No. 1807, Revised, will provide interagency leadership for bringing the Department into compliance with the spirit and intent of Executive Orders 11988 and 11990.

6. The Office of Environmental Quality Activities will monitor actions and progress of the Department in complying with Executive Orders 11988 and 11990.



DEPARTMENT OF HOUSING AND URSAN DEVELOPMENT
 REGIONAL/AREA OFFICE
 EXECUTIVE TOWER - 1405 CURTIS STREET
 DENVER, COLORADO 80202

REGION VIII

November 3, 1978

Mr. James D. Davies
 Area Manager
 Western Area Power Administration
 Department of Energy
 Post Office Box EGY
 Billings, Montana 59101

Dear Mr. Davies:

Thank you for the opportunity to review the draft Environmental Impact Statement (EIS), "Miles City - New Underwood 230-Kv Electrical Transmission Line", Montana, North Dakota, and South Dakota.

Your draft EIS has been reviewed with specific consideration for the areas of responsibility assigned to the Department of Housing and Urban Development (HUD) for review of other agencies' EIS's. These areas focus on a proposal's compatability with local and regional comprehensive planning and impacts on urbanized areas.

The relationship of this undertaking to local and regional planning was not discussed nor did the draft address coordination, if any, between state and local planning officials. Also, the draft fails to mention any impacts on or requirements for permanent or temporary housing needs. Finally, some indication of the degree of support or interest in this undertaking by local officials and organizations, as well as public opinion should be included.

We appreciate the opportunity to review and comment on this draft EIS. If you have questions regarding these comments, please contact Mr. Walter O. Kelm, Regional Environmental Clearance Officer, at (303) 837-3102 or FTS 327-3102.

Sincerely,

Raymond D. McKinney
 Raymond D. McKinney

Director
 Program Planning and Evaluation

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WESTERN AREA POWER ADMINISTRATION RESPONSE

The consultation and coordination section of the Draft EIS indicated the extent to which the planning for the line was coordinated with local planning. State Clearinghouse of the three states effected was formally advised of the proposal in December 1977. Throughout the planning progress, numerous contacts were made with Counties, the states, and individual landowners. In addition, technical studies for the proposed line were submitted to, and approved by the MARCA Design Review Committee as now indicated in Section Ala.

A-15



United States Department of the Interior
OFFICE OF THE SECRETARY
MISSOURI BASIN REGION
DENVER, COLORADO 80225

WESTERN AREA POWER ADMINISTRATION RESPONSE

In reply refer to:
ER 78-1053

December 12,

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Mr. James D. Davies
Area Manager
Western Area Power Administration
P.O. Box EGY
Billings, Montana 59101

Dear Mr. Davies:

We have prepared the following comments after reviewing the draft environmental impact statement for Miles City-New Underwood 230 kV Electrical Transmission Line.

The DEIS, prepared by the Western Area Power Administration, analyzes the potential impacts of a proposed transmission line extending 328 miles from Miles City, Montana, to Underwood, South Dakota. Construction would require approximately 2,470 wood-pole, H-frame structures 65 feet high, with three conductors and two overhead static wires, together with a total of about 86 acres of land. A 105-foot right-of-way easement also would be required in most places.

The study utilizes an effective technique of describing features along the proposed route somewhat like a road log. Mineral resources along the route include coal, oil and gas, sand and gravel, and possibly uranium. Known recoverable coal resource areas are identified on exhibit II-A, and oil and gas fields on exhibit V. The discussion of mineral resources in Part B, Description of the Environment, appears adequate, except that no hint of the quantities, and therefore the potential importance, of minerals involved is given.

The description of the proposal indicates that a study was made showing the need for this new transmission line, but does not give facts and figures supporting this conclusion. The discussion under Service Facilities, page 31, actually states in a simpler, more direct way the value of the proposed line. If some of this discussion could be moved forward to the description of the proposal, the reader would start out with a better understanding of the rationale for the proposed construction.

Quantities for the Pine Hills, Knowlton and Lame Jones KRCRA's, as provided by the Montana Bureau of Mines and Geology, are now included in the statement.

The discussion on page 31 of the draft EIS was pertinent to both the problem in the area that requires construction of the new line and to a description of the existing environment. The discussion has been left in section B8 in this final EIS and has been cross-referenced in Chapter A.

78-1553

Another omission seems to be a discussion of the size of construction and maintenance work forces and their impact on the area of construction. Costs of any sort do not seem to be adequately presented in this EIS.

Construction of this transmission line is unlikely to significantly inhibit development of resources along its route. The route has been planned on the basis of a 6-mile wide corridor, which should allow actual alignment to avoid sites of existing and potential developments. The nature of a powerline would not in itself prevent development of any significant mineral resources along its route.

Little mention of geologic constraints or hazards to the proposed construction was found in the draft statement, and no specific indication that geology-related constraints and impacts would be considered at a later stage of planning. However, more than one-half of the proposed corridor delineated on pages 6 to 8 crosses regions that are characterized as having moderate or high landslide susceptibility. In general, the clay-mineral content of many of the rocks within this part of the project area is moderate to high, imparting a tendency to be susceptible to slumps and earth flows. Valley walls of the Little Missouri River not far to the north of the proposed transmission-line crossing are sites of historic landsliding.

The portion of the corridor within South Dakota is estimated to be the most susceptible to landslides, particularly on valley sides of major tributaries to the Missouri River. Since the alignment is still no more narrowly constrained than a 6-mile wide corridor, and since the region traversed by the proposed corridor is one of above-average potential for geologic constraints and impacts, it would be advisable to consider geologic factors in selecting the actual alignment and in evaluating probable impacts of proposed construction.

Several park and recreation areas are located within the proposed corridor shown in exhibit III. Some of these areas have received matching assistance from the Land and Water Conservation Fund (L&WCF) for the acquisition of lands and/or development of facilities. These L&WCF areas are:

- South Sandstone State Recreation Area, 6 miles southeast of Plevna in Fallon County, Montana
- Rush Hall Reservoir, 3 miles north of Baker in Fallon County, Montana
- Bowman Golf Course, 2 miles south of Bowman, Bowman County, North Dakota
- several park and recreation areas within the towns of Baker, Montana, and Rhame, Bowman, Scranton, Reeder, and Hettinger in North Dakota

A discussion has been added to section C-7 to indicate the anticipated impacts from construction and maintenance workers.

A portion of the line traverses areas susceptible to landslides. A geologic reconnaissance along the preliminary alignment has been made. Geologic investigations along the alignment will include a geologic strip map one-half mile either side of the alignment. Included on the strip map will be the geologic units traversed, geologic hazards such as landslide areas, soft areas needing special attention and any other geologic factor which would influence construction. A full geologic report will be prepared and provided to the designers prior to construction. Any modifications necessitated by the geology would be made prior to start of construction as part of the geologic investigations, auger holes and penetration resistance drill holes will be drilled as an aid in evaluating foundation conditions. After preliminary structure sites are selected, the site will be visited by a geologist to evaluate the geologic hazards of the site. Some sites may be relocated to avoid certain geologic hazards.

The proposed alignment has been located so as to avoid these recreational areas.

We note that the centerline will be shifted to minimize impacts to public recreation areas. If use of land from a L&WCF area is found to be unavoidable, you should be aware that park and recreation areas receiving monies from the fund are subject (in their entirety) to the provisions of Section 6(f) of the L&WCF Act, as amended. This section of the Act requires that changes from the recreational use of the land be approved by the Secretary of the Interior. Any request for a change in land use must be initiated by the appropriate project sponsor through the State Liaison Officer (SLO) for the state. The SLOs can also provide more detailed information on the locations, boundaries, and sponsors of the projects. The Montana SLO is Ronnie G. Holliday, Administrator, Parks Division, Montana Department of Fish and Game, 1420 E. 6th Avenue, Helena, Montana 59601. The North Dakota SLO is Robert M. Horne, Director, North Dakota Department of Parks and Recreation, Route 2, P.O. Box 139, Mandan, North Dakota 58554.

The segment of the Little Missouri River north of Marmarth has been identified by the Secretaries of the Interior and Agriculture as a potential addition to the National Wild and Scenic Rivers System, pursuant to Section 5(d) of Public Law 90-542. At this time, there are no statutory restrictions for the protection of the river corridor. However, we urge that careful consideration be given to a route south of Marmarth which would leave the designated segment unimpaired as a potential addition to the National System.

We note that a cultural resources survey of the centerline of the proposed route is underway, and that the centerline can be shifted to avoid identified sites. We suggest that the final statement provide a summary of survey results as well as letters from the State Historic Preservation Officers indicating satisfaction with the survey and, if appropriate, the mitigation procedures. If any sites would be affected despite efforts to relocate the centerline or structure locations, the final statement should include a commitment to compliance with the procedures of 36 CFR 63 and 36 CFR 800.

Page 11, second paragraph: "Within the corridor (study area) a centerline of the transmission line will be selected based on minimizing . . . environmental damage, avoiding . . . important fish and wildlife habitat . . . and minimizing . . . the amount of tree clearing required." You conclude the paragraph: "The centerline selection and final structure spotting is presently underway through combined engineering effort of aerial photography and land survey and is expected to be completed in December 1979 with the award of the construction contract by March 1980."

This paragraph suggests that sufficient time has been allowed to work with appropriate fish and wildlife agencies to reduce adverse impacts to a minimum. We assume that contact has been made and is continuing.

The alignment selected for the transmission line crosses the Little Missouri River north of the town of Marmarth, North Dakota, as a suitable crossing could not be made to the south without incurring increased costs, possible landowner problems and additional impacts of the crossing site itself. Another consideration in the initial siting of the line was the fact that access for constructing and maintaining the line is more readily available north of Marmarth. It should be pointed out again that Montana-Dakota Utilities Co. will construct the transmission line in North Dakota and is presently applying to the State Siting Commission for an approved alignment location. In approving a location the State will consider their present designation of the river as a Scenic River as well as the proposed Federal designation. WAPA discussed this comment with representatives of the Department of Interior in Denver, Colorado. As of June 1979, the proposed designation to the Federal Wild and Scenic River System has not been made. We were advised by DOI that they would not have a major conflict with the line location that the State will approve.

The timing of the cultural resources study and this final EIS is such that the results of the study are not yet available. Section D.4.a. of the EIS has been expanded to show what commitments WAPA will make to comply with the 36 CFR 800 and 36 CFR 63.

The proposed corridor will pass through a part of North Dakota that is nearly devoid of natural wetlands. Consequently, the Fish and Wildlife Service has no fee or easement interests within the proposed corridor. Except for federally designated threatened and endangered species and migratory birds, the resident fish and wildlife resources of the area are generally considered to be the concern and responsibility of the North Dakota Game and Fish Department. Almost all studies and accumulated data relating to various resident species are in the Department's possession.

We note on page 71 it is stated: "Information on potential areas of conflict with wildlife was solicited from the Montana, North Dakota, and South Dakota fish and wildlife agencies. The North Dakota Game and Fish Department advised that the most direct route paralleling U.S. Highway 12, which would minimize construction of access roads in the environmentally sensitive 'Badlands' portion of the route, would be preferred."

Apparently no contact was made with the Fish and Wildlife Service, presumably for the reasons just discussed in the previous paragraph.

Page 13, second paragraph: "In the North Dakota badlands area, the Little Missouri River is traversed by the corridor. This river has been designated by the State of North Dakota as a wild and scenic river; however, a river crossing cannot be avoided."

Because of the remote and wild nature of this river, would it be possible to bury the line under the river in order to maintain primitiveness? We are aware that underground lines are costly and, over long distances, probably still unjustified, but the Little Missouri is not a wide river and should not be marred if at all possible. We also wish to point out that recently (November 1978) the State of North Dakota has filed civil suit against several federal agencies in an attempt to clear title rights to the Little Missouri riverbed. The state, among other things, is asking the courts to declare the river to be navigable. If the courts find in the state's favor before the line is put across the Little Missouri, then we assume a permit pursuant to Section 10 of the Rivers and Harbors Act of 1899 may be required.

Page 18, top of page: "Herbicides may be used in the substation yards and occasionally on the transmission line right-of-way, but only when requested by the landowner . . . Application of Artotol (Atrazine - 80 percent active ingredient) . . . is the primary weed control measure . . . The annual application rate . . . varies from 5.4 to 22.7 kilograms (12-50 pounds) per 0.4 hectare (1 acre) depending on weed species and is applied during summer months. It is expected that the use of herbicides would be limited to the 7 hectare (17 acres) used for substation space."

This assumption is correct. Our contact had only been with the State Fish and Wildlife agencies, and not with the Federal Fish and Wildlife Service.

The state classification for this river is from the North Dakota-South Dakota border to the point where it flows into the Missouri River. A reasonable alternate route to avoid the river was not available.

Section E2 of this final EIS has been expanded to discuss buried cable at river crossings. WAPA still opposes burying cables under river beds for a number of reasons. Costs are much higher both for initial installation and operation and maintenance. The conduit carrying the conductor is filled with oil for insulating purposes which presents a real threat to pollution of the river in the event of an accident, and finally there will be short term adverse effects from installation construction. The Montana-Dakota Utilities is constructing this portion of the line and must receive siting permission from the State of North Dakota. WAPA assumes that the State of North Dakota will give due consideration to the wild and scenic resources of the Little Missouri River in determining where the crossing shall be.

It appears to us that the amount of herbicide to be used on the right-of-way is really not known since that amount is dependent on landowner request. Obviously, many landowner requests could sharply increase the amount of herbicides applied annually. Regarding use of herbicides on the 17 acres used for substation space, we believe asphalt or gravel, or even crushed scoria, would be more desirable than herbicides to suppress weed growth. A major problem with herbicides, as with all pesticides, is that they do not stay where you put them. Many work their way into ground water, surface water, and animal tissue.

Page 21, third paragraph: "There are ground water aquifers along the transmission line route. Small alluvial aquifers exist along the flood plains of some of the larger streams. Bedrock aquifers of unknown extent exist under part of the area. Domestic and stock water is being used from these sources."

This paragraph reinforces our concern, previously expressed, regarding contamination of ground water with pesticides (herbicides).

Page 27, first complete paragraph: The sturgeon chub (*Hybopsis gelida*), an uncommon to rare fish in Montana, is found in the Powder River. This should be mentioned in this section.

Page 27, first complete paragraph: In addition to these species, flathead catfish, northern pike and walleye inhabit the Little Missouri River which is probably the best fish habitat in the area traversed by the line.

The 1978 North Dakota Stream Evaluation Map shows the entire Little Missouri River to be Value Class I, which is "highest-valued fishery resource."

Page 28, first complete paragraph: Sage grouse and sharp-tailed grouse are known to exist along the proposed route and potential impacts to their strutting grounds should be discussed. Strutting grounds are necessary for the existence of these birds.

Page 28, last paragraph: This paragraph states that no threatened or endangered species listed by the Department of Interior regularly utilize the area traversed by the proposed line. This may be erroneous in that both the black-footed ferret and the whooping crane have recently been sighted in the general area. Confirmed sightings of the black-footed ferret have been made very recently in Carter County, and state biologists have also indicated confirmed sightings of the whooping crane in the area. Since sightings of two species of wildlife listed as endangered under federal law have been confirmed in the vicinity of the project, the Department of Energy should review its responsibilities under Section 7 of the Endangered Species Act.

On the basis of our experience, very few landowners are expected to request the use of herbicides on the transmission line right-of-way. Only those herbicides approved by EPA for specific purposes will be used. Label instructions are carefully followed when using them. When used in accordance with recommended procedures, herbicides used by WAPA would not be a hazard to fish or wildlife. Substation yards are covered with crushed rock or compacted gravel which suppresses weed growth. The main problem with weed growth is along the immediate outside perimeter of the substation yard, along the fence line.

The statement has been revised to reflect this comment.

The statement has been revised to reflect this comment.

The statement has been expanded as suggested.

The conclusions in the statement were based on a review of existing literature on the range of these species as well as personnel communication with endangered species recovery team leaders. WAPA is continuing coordination with Interior in this regard and will consult with the Fish and Wildlife Service in Denver, Colorado, to determine what the effect of construction of the line will be on these species.

WESTERN AREA POWER ADMINISTRATION RESPONSE

6

In February 1970, the carcass of an adult male swift fox (probably Vulpes velox) was recovered about 9 miles north and 2 miles east of Scranton in Slope County. The Fish and Wildlife Service is considering recommending the addition of the swift fox to the federal list of threatened and endangered species. The northern kit fox (Vulpes velox nebes) is already on the list.

Page 30, first paragraph: "Fishing opportunities would be available at any of the rivers crossed by the line, and possibly at some of the stock dams within the proposed corridor. Hunting opportunities within the corridor would also be available . . ."

We think these statements are inaccurate. Where the corridor crosses public lands, we assume presently available fishing and hunting opportunities would not be diminished by any transmission line right-of-way easement agreement. Where the right-of-way crosses privately owned land, we do not believe fishing or hunting opportunities will be increased because of the easement agreement.

Page 36, second paragraph: The clearing of vegetation for the right-of-way in the Pine Hills area east of Miles City may well cause serious erosion problems if the clearing parallels the slopes of the hills. This would be especially true if blading is involved. These problems and measures to prevent them should be addressed.

Page 40, last paragraph: "Once construction and clearing activities have ceased . . . in the majority of cases, the vegetation will recover naturally, but areas where the soil has been unnecessarily disturbed by the contractor will be reseeded to a mixture of grasses to prevent erosion."

We understand this paragraph to mean that only in a few selected areas will disturbed soil be reseeded. Elsewhere, disturbed areas will be left to chance. We recommend that all disturbed areas be reseeded immediately following completion of construction and clearing activities in order to reduce wind and water erosion to a minimum and because it is the correct action to take.

Page 41, second paragraph: "Access to most structure sites is readily available from (existing) secondary roads and farm trails in North and South Dakota. A permanent maintenance road and vegetative control will not be required along the right-of-way in these states."

We consider the absence of a permanent maintenance road and related vegetative control along the North Dakota segment of the line to be most fortuitous. Its absence will reduce undesirable impacts.

WAPA agrees with these comments. The statement on fishing opportunities has been removed. The statement on hunting opportunities has been revised to reflect the potential for providing access to previously inaccessible areas but not changing the hunting potential.

Clearing operations will be strictly controlled by the construction specifications and closely monitored by the Construction Engineer to avoid permanent damage. Any areas damaged by blading or other operations will be restored to the original or other acceptable condition. Wood pole construction allows the use of smaller or lighter equipment, allowing more flexibility in site selection, thereby minimizing site preparation and damage.

The types of surface disturbance that can be expected from this type of construction is generally that caused by vehicular traffic. The auger hole technique produces far less disturbance than excavating concrete footings. WAPA's experience in this part of the country shows that revegetation will occur fairly rapidly after work is completed. Certain areas such as cable pulling sites are more severely disturbed will require assistance in revegetating. The success of such a program depends on a number of factors including the degree of disturbance, time of the year, availability of water, and the type of vegetation to be reestablished. WAPA still feels that selective revegetation is appropriate for this project and will factor in the potential for wind and water erosion in deciding what areas to revegetate.

A graded permanent road is not planned for the North Dakota segment of the line. Wood pole construction allows the use of smaller or lighter equipment, thus reducing the need for graded access roads and the related vegetative control.

Page 44, first paragraph: "There will be no impacts of fish from construction of the proposed transmission line. Structures will be set well back from the edge of water courses and machinery will not enter live streams."

Generally, we believe this is a correct evaluation, provided the two stated conditions are strictly followed. However, as we previously commented, should the Little Missouri River be legally declared navigable, a Section 10 permit may be required if the transmission line has not yet crossed that stream at the time of declaration.

Page 44, third paragraph: "Following construction there will probably be occasional unquantifiable losses of birds which collide with conductors (wires); however, the line is at a sufficient distance from wetlands and principal north-south migration paths that such accidents would be unusual."

We agree that bird collision losses which may result from the line are presently unquantifiable but there is hard evidence that such losses will be occasional or unusual. While wetlands with their associated waterfowl are not numerous in southwestern North Dakota, there are a number of stock dams which harbor and produce a considerable number of waterfowl. Also, there are a variety of passerine birds which breed in and/or migrate through the area. In short, we think this paragraph makes an unsupported conclusion.

Page 45, third paragraph: "Conductors and ground hardware on the line will be placed far enough apart (6.7 meters or 22 feet) to preclude accidental electrocution of large birds."

We generally agree with this assumption. Literature available to us generally supports it. However, should any problem sites be discovered following construction, available corrective techniques should be implemented. Modifications are presented in a report titled "Suggestive Practices for Raptor Protection on Powerlines" and distributed by Raptor Research Foundation, Incorporated. Also, the REA's Bulletin 61-10 titled "Powerline Contacts by Eagles and Other Large Birds," dated March 1972, can be consulted.

Sincerely,


JOHN E. RAYBOURN
Regional Environmental Officer

If such a declaration is made, Montana-Dakota Utilities Co. will acquire such a permit.

The WAPA did not wish to imply that the problem of bird collisions are not significant. Only that substantial study on the problem indicates no real way of quantifying the effect. The referenced statement has been revised to reflect FWS concerns.

WAPA concurs in this suggestion and will make every effort to take corrective action for protection of large raptors should the problem arise.

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

Custer National Forest
P.O. Box 2556
Billings, MT 59103

NOV 2 1978	
OCT 31 1978	
Date	
U.S. FOREST SERVICE	
Billings	
62200	

WESTERN AREA POWER ADMINISTRATION RESPONSE

Mr. James D. Davies, Area Manager
Western Area Power Administration
Department of Energy
P.O. Box EGY
Billings, MT 59101

Dear Mr. Davies:

We have reviewed the Draft EIS, Western Area Power Administration, Miles City-New Underwood 230-Kv Electrical Transmission Line (proposed).

Those portions of the two Ranger Districts over which the proposed line would pass have no critical areas of real concern, recognizing that when the location is firmed up inside the 6-mile corridor, we will have a better idea of what the impacts will be. We ask that the Forest Service be given an opportunity to contribute to the selection of that final route where National Grasslands are involved.

We assume that where highways follow the corridor, the line would follow the highway right-of-way where possible. Exhibit II-B shows a substantial distance within the corridor along Highway 75 which would be the most accessible and provide for easiest installation.

We assume also that the line size and location will conform to the Region-wide approved power grid to best serve the power needs of that area and that such conformance will be reflected in the final statement.

One concern was that the statement did not address the impacts if a line should break.

We appreciate the opportunity to comment on the draft.

Sincerely,



ROBERT M. RICHMOND
Acting Forest Supervisor

The U.S. Forest Service has had the opportunity to review the proposed alignments in the area of the National Grasslands prior to the publication of this final EIS.

The line has been located to follow highway 75 in that area.

Section Ala of the final EIS now shows that technical studies for the proposal have been presented to, and approved by, the Mid-Continent Area Reliability Coordination Agreement Design Review Committee.

The draft EIS did not discuss the effect of a broken line because it was not considered a significant issue. If a line was to break for what ever reason, it would be deenergized when it contacted the ground.

78-1367

UNITED STATES DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

Box 1458, Bismarck, North Dakota 58501

Mr. James D. Davies
Area Manager
Western Area Power Administration
Department of Energy
P.O. Box EGY
Billings, MT 59101

OCT 18 1978	
October 18, 1978	
E. L. Fisk	

WESTERN AREA POWER ADMINISTRATION RESPONSE

Dear Mr. Davies:

We appreciated the opportunity to review the draft environmental impact statement for the Miles City-Baker-Hettinger-New Underwood 230-kv Transmission Line, Pick-Sloan Missouri Basin Program.

On page 36, second paragraph, the 7th sentence appears to be in error. It probably should read, "At the most 27.9 square meters (300 square feet) ...".

Much of the area to be disturbed has very poor soil. Special care should be taken in revegetation of these areas such as stockpiling topsoil and replacing over the spoil areas. Proper specifications should also be used in fertilizing, mulching and seeding of these disturbed areas along the proposed right-of-way.

Sincerely,

Allen L. Fisk

Acting

Allen L. Fisk
State Conservationist

cc: Director, Evt. Services Division, SCS, Washington, D.C.

The statement has been corrected as indicated.

The WAPA construction specifications will provide for the reclamation of all areas damaged under construction. The restoration methods used will vary, depending upon land use, soil types, and terrain features. Treatment of disturbed areas may include restoring original grade, replacing of top soil, mulching, seeding, use of gravel blankets, riprap, or other appropriate measures. Investigation of final centerline location will determine ultimate treatment methods.

The Montana-Dakota Utilities Co. reseeding and reclamation activities are separate actions from the construction contract. The Company works out these activities with the individual landowners.



78-1291

A-24

UNITED STATES DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

P. O. Box 970, Bozeman, Montana 59715

WESTERN AREA POWER ADMINISTRATION RESPONSE

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OCT 24 1978

October 23, 1978

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ELCO	
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Mr. James D. Davis, Area Manager
Western Area Power Administration
Department of Energy
P. O. Box EGY
Billings, Montana

Dear Mr. Davis:

We have reviewed your department's Miles City - New Underwood Electrical Transmission Line draft environmental impact statement and have but one comment to offer.

Several miles of the proposed line will traverse areas with fragile soils. If left unprotected following disturbance, such areas could become badly eroded. A reclamation plan for disturbed areas should be included in a final draft of this EIS.

See response to similar comments from the Department of Interior (page A-21) and the Bismarck, North Dakota, Soil Conservation Service (page A-24).

Sincerely,

Van K Haderlie
State Conservationist





Office of
Chief

United States Department of the Interior

BUREAU OF MINES

BUILDING 20, DENVER FEDERAL CENTER
DENVER, COLORADO 80225

Intermountain Field Operations Center

NOV 6 1978	
NO KEY NECESSARY	
KEY CHECK	
ASSIGNMENT	
IND. COPY TO:	
RECEIVED	NOV 11 1978
November 1, 1978	
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<i>B200</i>	

WESTERN AREA POWER ADMINISTRATION RESPONSE

Mr. James D. Davies, Area Manager
Western Area Power Administration
Department of Energy
P. O. Box EGY
Billings, Montana 59101

Dear Mr. Davies:

Personnel of the Intermountain Field Operations Center, Bureau of Mines, have reviewed the draft environmental impact statement, Miles City - New Underwood 230-Kv transmission line as requested on September 27 by James L. Liverman, Acting Assistant Secretary for Environment, Department of Energy.

The DEIS, prepared by the Western Area Power Administration, analyzes the potential impacts of a proposed transmission line extending 328 miles from Miles City, Mont., to Underwood, S. Dak. Construction would require approximately 2,470 wood-pole, H-frame structures 65 feet high, with three conductors and two overhead static wires, together with a total of about 86 acres of land. A 105 - 700-foot right-of-way easement also would be required.

The study utilizes an effective technique of describing features along the proposed route somewhat like a road log. Mineral resources along the route include coal, oil and gas, sand and gravel, and possibly uranium. Known recoverable coal resource areas are identified on exhibit II-A, and oil and gas fields on exhibit V. The discussion of mineral resources in Part B, Description of the Environment, appears adequate, except that no hint of the quantities, and therefore the potential importance, of minerals involved is given.

The description of the proposal states that a study was made indicating the need for this new transmission line, but does not give facts and figures supporting this conclusion. The discussion under Service Facilities, p. 31, actually states in a simpler, more direct way the value of the

See response to the U.S. Department of Interior comments, pages A-16 and A-17 for WAPA reply for this letter.

A-16



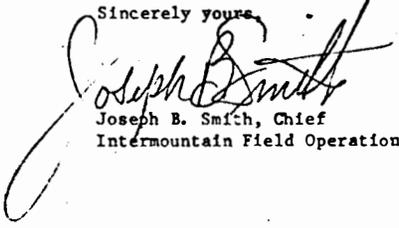
78-1389

proposed line. If some of this discussion could be moved forward to the the description of the proposal, the reader would start out with a better understanding of the rationale for the proposed construction. Another omission seems to be a discussion of the size of construction and maintenance work forces and their impact on the area of construction. Costs of any sort do not seem to be in this EIS.

Construction of this transmission line is unlikely to inhibit development of any mineral resources along its route. The route has been planned on the basis of a 6-mile-wide corridor, which should allow actual alignment to avoid sites of existing and potential mineral activity. The nature of a powerline would not in itself prevent development of any significant mineral resources along its route. ~~The electrical generating plant at Underwood, S. Dak., utilizes local lignite as its fuel.~~

~~Bureau of Mines personnel reviewed earlier stages of development of this generating plant and related transmission lines on November 1, 1973, and April 5, 1977.~~ Our field comments, provided as a service to DOE, do not constitute a formal review by either the Bureau of Mines or the Department of the Interior.

Sincerely yours,


Joseph B. Smith, Chief
Intermountain Field Operations Center



Office of
Chief

United States Department of the Interior

BUREAU OF MINES

BUILDING 20, DENVER FEDERAL CENTER

DENVER, COLORADO 80225

Intermountain Field Operations Center

WESTERN AREA POWER ADMINISTRATION RESPONSE

NOV 19 1978

November 7, 1978

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13200	10
13200	

Mr. James D. Davies, Area Manager
Western Area Power Administration
Department of Energy
P. O. Box EGY
Billings, Montana 59101

Dear Mr. Davies:

In our letter on November 1, 1978, reviewing the draft environmental impact statement, Miles City - New Underwood 230-Kv transmission line, please strike out the last sentence in paragraph 5 and the first sentence in paragraph 6 which refer to the Underwood Generating Station, McLean County, N. Dak. These have no relevance to the draft environmental statement under review and should not have been included.

The correction has been made as requested.

Sincerely yours,

Joseph E. Smith, Chief
Intermountain Field Operations Center

82-V

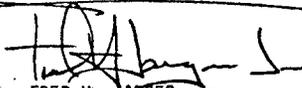
78-1421

Page 2

To: Regional Director
Federal Aviation Administration
10455 E. 25th Avenue
Aurora, Colorado 80010

Thank you for the opportunity to review your proposed trans-
mission line routing.

Sincerely,



FRED H. JAEGER, Jr.
Chief, Planning Staff

Enclosure

01-V

FEDERAL ENERGY REGULATORY COMMISSION

Federal Building, Room 3130
230 South Dearborn Street
Chicago, Illinois 60604

OFFICIAL FILE COPY		
NOV 8 1978		
NO REPLY NECESSARY	Initial	Date
REPLY OR OTHER ACTION TAKEN	Case No.	Date
NO ANSWER TO DATE	DATE	DATE
6100		
B2000	ADD	
B2200		

WESTERN AREA POWER ADMINISTRATION RESPONSE

Mr. James D. Davies
Area Manager
Western Area Power Administration
Department of Energy
P. O. Box EGY
Billings, Montana 59101

Dear Mr. Davies:

We have reviewed the Draft Environmental Impact Statement, furnished us with Mr. James L. Liverman's letter dated September 27, 1978, that was prepared by your office for the proposed new Miles City-New Underwood 230 kV Electrical Transmission Line that will be routed through portions of Montana, North Dakota and South Dakota (Pick-Sloan Missouri Basin Program, DOE/EIS-0025-D).

Comments on the DEIS are of this office and do not reflect the views of the Federal Energy Regulatory Commission. They are made in accordance with the National Environmental Policy Act of 1969 and the August 1, 1973 Guidelines of the Council on Environmental Quality.

The load growth projections given in the DEIS are consistent with similar data reported by the members of the Mid-Continent Area Reliability Coordination Agreement (MARCA) in their "Coordinated Regional Bulk Power Supply Programs" annual response to the Department of Energy/Economic Regulatory Administration on April 1, 1978. Based on a review of these data together with similar data submitted by other large electric utility systems throughout the country, we conclude that the projected increases in system transmission requirements are reasonable and will be required to assure an adequate and reliable electric power supply.

Thank you for the opportunity to comment on the Draft Environmental Impact Statement.

Very truly yours,

Bernard D. Murphy
Bernard D. Murphy
Regional Engineer

No response necessary.

Missouri River Basin Commission

Suite 403 • 10050 Regency Circle • Omaha, Nebraska 68114

"A Presidential State-Federal River Basin Commission"

November 7, 1978

Mr. James D. Davies
Area Manager
Western Area Power Administration
Department of Energy
P.O. Box EGY
Billings, Montana 59101

Dear Mr. Davies:

The Missouri River Basin Commission staff has reviewed the draft environmental impact statement (DEIS) for the Miles City-Baker-Hettinger-New Underwood 230-kv Transmission Line proposed for Montana, North Dakota and South Dakota. Staff review of the environmental impact statement focused on: (1) provision for adequate public and agency review; (2) scope and adequacy of coverage of relevant Federal, State, regional, or local policies and programs within the planning area; and (3) consideration of cumulative impacts. The following comments are provided for your consideration.

In regard to review of the proposed action, we suggest that the Little Missouri Scenic River Commission be consulted and provided a copy of the DEIS. This Commission was established under the "Little Missouri State Scenic River Act", and was given the authority to serve in an advisory capacity for the protection and maintainance of the scenic, historic and recreational qualities of the river. The president, Mr. Harold Lowman, resides at Sentinel Butte, North Dakota. We also noted that an incorrect address is given for the Department of Interior's Missouri River Basin Planning Officer. Several months ago this office was moved to Denver. The new address and responsible official is:

Mr. Terry Lynott
U.S. Department of Interior
Denver Federal Center
Building 67, Room 690
Denver, Colorado 80225

In the DEIS little if any detail is provided on actions contemplated to minimize the impact of the overhead transmission line on the visual and recreational resources along the Little Missouri River. If it is not economically or technically feasible to bury the transmission line at the river crossing,

COMMISSION MEMBERS

Colorado; Iowa; Kansas; Minnesota; Missouri; Montana; Nebraska; North Dakota; South Dakota; Wyoming; Department of Agriculture; Department of the Army; Department of Commerce; Energy Research and Development Administration; Environmental Protection Agency; Federal Power Commission; Department of Health, Education and Welfare; Department of Housing and Urban Development; Department of the Interior; Department of Transportation; Yellowstone River Compact Commission; Big Blue River Compact Administration.

John E. Acord, Montana
Vice Chairman, EGY

NOV 9 1978

Federal River Basin Commission

NOTED RECORDED (initial) Date

KEY OF OTHER ACTION TAKEN

INFO. COPIES TO:

TO:	DATE:
EGY	
B2000-AD	
B2000	

WESTERN AREA POWER ADMINISTRATION RESPONSE

The Little Missouri Scenic River Commission was consulted by letter of November 29, 1978, and was also provided a copy of the DEIS as suggested.

The mailing list has been changed as suggested

The response to a similar comment for the U.S. Department of the Interior gave the reasons for not burying the conduit at the river crossing. (See page A-19) Final site location must be approved by the State of North Dakota which will factor in the scenic resources of the Little Missouri River.

78-1405

A-32

Mr. James D. Davies
Page 2
November 7, 1978

WESTERN AREA POWER ADMINISTRATION RESPONSE

special consideration in advanced planning should be given to selection of a centerline within the proposed corridor which closely parallels existing public facilities crossings of the river. We would also suggest that the applicability of the North Dakota Energy Conversion and Transmissions Facilities Siting Act and the Little Missouri State Scenic River Act, be discussed more thoroughly in appropriate places within the text.

In terms of cumulative effects, the proposed action is only one of several public facilities proposals which contemplate a crossing of the Little Missouri River in western North Dakota. It would be helpful if other proposed river crossings were also documented.

Thank you for the opportunity to comment.

Sincerely,



Carroll M. Hamon
Director of Planning
and Technical Services

The WAPA does not presently plan to build any facilities that will cross the Little Missouri River. The only other proposed crossing that we are aware of is one alternative route of the Northern Tier Pipeline. That crossing is proposed several miles north of our proposed transmission line.

OH:ds

cc: Vern Fahy, North Dakota State Water Commission
Terry Lynott, Missouri River Basin Planning Officer
Robert Horne, North Dakota Parks and Recreation Department

MONTANA BUREAU OF MINES AND GEOLOGY

Montana College of Mineral Science and Technology
Butte, Montana 59701

WESTERN AREA POWER ADMINISTRATION RESPONSE

Date: October 11, 1978

MEMORANDUM

TO: Dr. S. L. Groff, Director and State Geologist

FROM: Mr. Robert J. Pederson, Geologist *RJP/dsr*

COPIES TO:

SUBJECT: Transmission Line

The adverse effects of constructing a power line directly over a known coal resource area would be that the coal directly underneath the line could not be recovered without moving the line. To avoid such unnecessary cost, it would be best to avoid constructing the line over a coal deposit that can be mined by surface methods.

A-35

<u>Deposit</u>	<u>Coal bed</u>	<u>Reserves (X10⁶tons)</u>	<u>Acreage</u>	<u>Tons/Acre</u>	<u>Ash</u>	<u>Sulfur</u>	<u>Btu</u>
Pine Hills	Dominy	193.87	6,022	32,191	7.2	0.53	7,293
Knowlton	Dominy (M&L)	747.51	19,613	38,112	7.1	0.41	6,710
	Dominy (U)	120.31	4,448	27,048	5.6	0.38	6,645
Lane Jones	Dominy	150.00	10,593	14,160	---	----	6,020

Also, electrical lines have the potential to start fires, and if they are in close proximity to exposed coal beds, an underground fire could result. In some instances, it has taken years to extinguish a fire in a coal bed.

The alignment of the line has been located so as to avoid exposed coal beds. Should the known coal resources that are near the proposed line be developed at a future date, then their mining operations will have to consider the presence of the line.

RJP:dsr



MONTANA HISTORICAL SOCIETY

225 NORTH ROBERTS STREET • (406)449-2894 • HELENA, MONTANA 59604

WESTERN AREA POWER ADMINISTRATION RESPONSE

October 30 1978

NO.	DATE	DESCRIPTION	INITIALS	DATE
5620				

Mr. James D. Davies, Area Manager
Western Area Power Administration
Department of Energy
P. O. Box EGY
Billings, Montana 59101

Re: DEIS - Miles City
New Underwood 230Kv Electrical
Transmission Line

Dear Mr. Davies:

Thank you for the Draft Environmental Impact Statement on the Miles City -
New Underwood 230 Kv Electrical Transmission Line in Montana, North and
South Dakota.

Your draft indicates that a cultural resource survey will be conducted. Prior
to such a survey to identify and evaluate cultural resources that may be
impacted by your proposed project, it is impossible for me to comment on
the effect of your undertaking. For example, you may, or may not be able
to space structures to avoid sites. Some sites are quite extensive in size.

I wish to review the reported results of your survey prior to further
comment.

Thank you for notifying me of your project.

Sincerely,

Ken Korte
State Historic Preservation Officer

KK:EV:rgb

cc: State Clearinghouse

Section D4a of this final EIS has been expanded to show what WAPA will do to assure
minimal damages to cultural resources. A cultural survey of the proposed alignment
will identify what resources exist and the data will be provided to the State Historic
Preservation Officer of the three states affected.

ENVIRONMENTAL IMPACT STATEMENT ASSESSMENT FORM

Request for Environmental Impact Statement Review

TO: Montana Historical Society FROM: Montana State Clearinghouse
Helena, Mt 59601 Office of Budget and Program Planning
Room 221, Capitol Building
Helena, Montana 59501

Environmental Impact Statement Title: Draft EIS Western Area Power Admin.
Missoula City - New Underwood 230 Kw Elec. Sub. Sta.
Clearinghouse File Number: E-08-09-03

EIS Agency Sponsor: US Dept. of Energy

SPONSOR ADDRESS: P.O. Box 609, Billings, MT

CONTACT PERSON: James D. Service, Area Mgr., Western Area Power Admin.

COMMENTS DUE BY: November 10, 1978

The Above Named EIS Statement

- is enclosed for your review and comment
 should have been received by your Agency from the sponsor
 is available at the Clearinghouse Office for review (only one copy ~~is available~~ ^{is available})

Please evaluate the EIS for its consistency and fulfillment of statewide and local objectives related to

1. The environmental impact of the proposed action.
2. Any adverse environmental effects which cannot be avoided should the proposal be implemented.
3. Alternatives to the proposed action.
4. The relationship between local short-term uses of man's environment and maintenance and enhancement of long-term productivity.
5. Any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

IF YOUR AGENCY HAS COMMENTS ON THE ENVIRONMENTAL IMPACT STATEMENT, PLEASE SEND THE COMMENTS DIRECTLY TO THE EIS AGENCY SPONSOR AND FORWARD A COPY OF THE COMMENTS TO THE STATE CLEARINGHOUSE.

IF YOUR AGENCY DOES NOT INTEND TO COMMENT, PLEASE CHECK THE BOX BELOW AND RETURN THIS FORM TO THE STATE CLEARINGHOUSE.

NO COMMENT

Reviewer's Signature: [Signature]

Date: 11-4-78

NORTH DAKOTA STATE PLANNING DIVISION

STATE CAPITOL - NINTH FLOOR - BISMARCK, NORTH DAKOTA 58505
701-224-2818

October 27, 1978

STATE INTERGOVERNMENTAL CLEARINGHOUSE "LETTER OF COMMENT"
ON PROJECT REVIEW IN CONFORMANCE WITH OMB CIRCULAR NO. A-95

To: U.S. Department of Energy

STATE APPLICATION IDENTIFIER: 7809299979

OCT 30 1978	
B2200	
B2200	

Mr. James D. Davies, Area Manager
Western Area Power Administration
Department of Energy
P.O. Box EGY
Billings, MT 59101

Dear Mr. Davies:

Subject: Draft EIS by U.S. Department of Energy for Miles City-Baker-
Hettinger-New Underwood 230-kv Transmission Line.

This Draft EIS was received in our office September 29, 1978.

In the process of the A-95 review, the attached comments were received from
the Public Service Commission, State Highway Department and from the State
Game & Fish Department.

This document and attachment constitute the comment of the State Inter-
governmental Clearinghouse, made in compliance with OMB Circular No. A-
95. The ND State Intergovernmental Clearinghouse requests the opportu-
nity to review the final EIS.

Sincerely yours,

Bonnie A. Banks

Mrs. Leonard E. Banks
Associate Planner

LEB/aj

Attachment

A-38

NDSIC FORM B (9/71)

PNRS NO. ¹⁸⁻979

FROM: STATE INTERGOVERNMENTAL CLEARINGHOUSE
STATE PLANNING DIVISION
STATE CAPITOL
BISMARCK, NORTH DAKOTA 58501

Date Received

ENVIRONMENTAL IMPACT STATEMENT TO BE REVIEWED

TO: — ROBERT E BRADLEY 662
HIGHWAY DEPARTMENT 14
— HIGHWAY BUILDING - CAPITOL GROUNDS
BISMARCK ND 58505



ISSUED BY: U.S. Department of Energy

DATE: 10-4-78

NAME OF PROJECT: Draft EIS: Miles City - New Underwood 230 Kv Electrical Transmission Line

The attached Environmental Impact Statement is referred to your agency for review and possible comments. If you consider it satisfactory, please check the box labeled, "no comment." Otherwise, please check one of the other appropriate boxes. Your cooperation is asked in completing this memo and returning it to the State Intergovernmental Clearinghouse within 10 days from date of receipt. If no response is received within 15 days of date of notification it will be assumed you have no comment.

A-39

- No comment
- Meeting desired with applicant
- Comments submitted herewith (See Oct. 5, 1978 letter to Mr. James D. Davies attached)

1. Specific comments which are to be attached to the review statement which will be submitted by the State Intergovernmental Clearinghouse: (Use reverse side or separate sheets if necessary)

2. Reasons why meeting is desired with applicant:

Reviewer's Signature:

R. E. Bradley

Date: Oct. 9, 1978

Title:

R. E. Bradley
Chief Engineer

Tele: 224-2584

NORTH DAKOTA
STATE HIGHWAY DEPARTMENT



CAPITOL GROUNDS, BISMARCK, NORTH DAKOTA 58505

ARTHUR A. LINK
Governor of North Dakota

RE BRADLEY
Chief Engineer

COMMUNICATIONS SECTION

NOTICE
NO POST NECESSARY IF MAILED IN THE UNITED STATES
WALTER R. HJELLE
Commissioner

SEARCHED	INDEXED
SERIALIZED	FILED
OCT 11 1978	
FBI - BISMARCK	
B2000	
B2200	

October 5, 1978

Mr. James D. Davies
Area Manager
Western Area Power Administration
Department of Energy
P. O. Box EGY
Billings, MT 59101

Dear Mr. Davies:

SUBJECT: Pick-Sloan Missouri Basin Program
DOE/EIS - 0025-D

We have reviewed the Draft Environmental Impact Statement on the above noted project and wish to advise you of North Dakota's proposed highway construction in the area.

Design is nearly complete on the proposed regrading of U.S. Highway No. 12 from the Montana state line east to Rhame. From Rhame east to Bowman, regrading was completed in 1977.

Regrading of U.S. Highway No. 12 is proposed in 1982 from Bowman east to the Adams county line, and in 1984 from the county line east to Hettinger.

No construction is proposed from Hettinger east and south to the South Dakota border, as this segment was constructed to modern design standards.

U.S. Highway No. 85 from Bowman north to Amidon is also proposed for regrading in 1984. Bowman south to the South Dakota border was recently reconstructed and no construction is proposed.

Crossing permits (license) must be obtained from this office prior to the construction. We will review each and judge same based on their own merits. Should we find that a crossing may be in conflict with proposed construction, we will advise your Bismarck office.

WESTERN AREA POWER ADMINISTRATION RESPONSE

The construction schedule for the transmission line shows all work completed by 1981. The line will have sufficient ground clearances so as not to interfere with highway grading activities at the crossing sites.

The Montana-Dakota Utilities Co. will apply for any needed crossing permits in North Dakota.

A-40

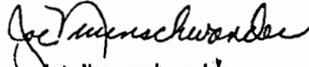
WESTERN AREA POWER ADMINISTRATION RESPONSE

Mr. James D. Davies
Page 2
October 5, 1978

Since the terrain is rolling, we would appreciate the opportunity to review your routing whenever the transmission line centerline is within 200 feet of the existing highway centerline. This may eliminate future relocation and disruption of service to the facility.

We sincerely appreciate the opportunity to comment on the matter and will extend an invitation to contact us at any time you desire.

Sincerely yours,


Joe Neuenschwander
Utilities Engineer

JN:rkp

WAPA has requested that Montana-Dakota Utilities Co. maintain coordination with the North Dakota State Highway Department because MDU will construct the line in North Dakota. In addition, the location of the line will have to be approved by the North Dakota Public Service Commission wherein the concerns of the State Highway Department will be considered again.

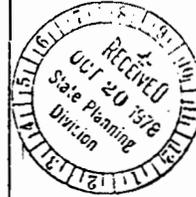
FROM: STATE INTERGOVERNMENTAL CLEARINGHOUSE
STATE PLANNING DIVISION
STATE CAPITOL
BISMARCK, NORTH DAKOTA 58501

Date Received

ENVIRONMENTAL IMPACT STATEMENT TO BE REVIEWED

TO: _____

DR. ED ENGLERTH, RECLAMATION DIR. 662
PUBLIC SERVICE COMMISSION OF N. D. 27
STATE CAPITOL
BISMARCK ND 58505



ISSUED

BY: U.S. Department of Energy

DATE: 10-4-78

NAME OF

PROJECT: Draft EIS: Miles City - New England 230 Kv Electrical Transmission Line

The attached Environmental Impact Statement is referred to your agency for review and possible comments. If you consider it satisfactory, please check the box labeled, "no comment." Otherwise, please check one of the other appropriate boxes. Your cooperation is asked in completing this memo and returning it to the State Intergovernmental Clearinghouse within 10 days from date of receipt. If no response is received within 15 days of date of notification it will be assumed you have no comment.

No comment

Meeting desired with applicant

Comments submitted herewith

1. Specific comments which are to be attached to the review statement which will be submitted by the State Intergovernmental Clearinghouse: (Use reverse side or separate sheets if necessary)

2. Reasons why meeting is desired with applicant:

Reviewer's

Signature: _____ Date: _____

Title: _____ Tele: _____

Public Service Commission
State of North Dakota

Capitol Building
Bismarck, North Dakota 58505
(701) 224-2400



Commissioners
Richard A. Etkin, President
Don J. Wolf
Doris Lager
Secretary, Janet Sauter

WESTERN AREA POWER ADMINISTRATION RESPONSE

October 19, 1978

Mrs. Bonnie A. Banks
Associate Planner
State Planning Division
State Capitol Building
Bismarck, ND 58505

Dear Mrs. Banks:

RE: Draft EIS for Miles City - New Underwood 230 kV Electrical
Transmission Line

Our comments on the Western Area Power Administration EIS referenced
above are as follows:

General

Montana Dakota Utilities has submitted a letter of intent to
the PSC Siting Division and is preparing an application for a Certificate
of Corridor Compatibility and proposed to prepare an application for a
route permit. Our comments are academic as we will be exercising jurisdic-
tion on the siting of the North Dakota portion of this project and can
obtain more detailed information in the siting process.

Specific

On page 17, under Related Activities, the substations are listed
including the Bowman substation which is to be built by Upper Missouri
G & T Electric Cooperative. It follows that the Bowman substation and
possibly some of the others will be built by federal funds and should
not be considered a related activity but rather a part of the project in
order to meet the requirements of NEPA. In this case the description of
the substation facilities should be in much greater detail, including
equipment, type of insulating oil, noise, usual impact, operation and
maintenance and mitigation of impacts.

The statement has been expanded to provide additional detail about the substation
facilities associated with this project.

On page 22, "Known Recoverable Coal Resource Areas as designated by the U.S. Geological Survey" is referred to as an authority. Recent investigations by coal companies have expanded the areas of the state that have recoverable coal and areas that have coal that may be recoverable at a later time with the development of new technology and with a change in economics. Have the coal companies operating in the area been contacted?

On pages 35 and 36, under Vegetation, it is stated "In the majority of cases, the vegetation will recover naturally but areas where the soil has been unnecessarily disturbed by the contractor will be reseeded to a mixture of grasses to prevent erosion. The word "unnecessarily" is not appropriate as we can visualize a very large area of soil disturbance that was necessarily disturbed and should be reseeded whereas small areas that were disturbed unnecessarily may revegetate naturally. This is also mentioned again on page 56.

On page 47, more detail should be given on radio and television interference such as expected signal strength if no measurements were made, the noise level expected from the line, and the signal to noise ratio. In the event that there is interference, what will be the mitigation? Page 54 covers mitigation only by location and conductor size.

On page 49, it states "For much of its length, the proposed transmission line would be placed at or near section or midsection lines where possible as this location would provide the least amount of disturbance to farming operations." We would have to agree that with the transmission line on the midsection line with each pole of the structure being eleven feet from the midsection line, there would be minimum disturbance to farming operations. When it comes to placement of the line along or near section lines, the statutory requirement that the line be 75 feet from county roads and 100 feet from state highways puts it out in the fields and there seems to be very little advantage, if any, with that location. Thus, we favor the midsection line location, although our advance information on proposed location has no midsection line location.

On page 50, in the discussion of wood poles compared to steel structures, many of the points raised seem to be superficial such as:

1. Ease of fabrication is largely reflected in cost.
2. Concrete requirements are not necessarily tied to steel structures as direct embedment of steel structures is becoming more common.
3. The advantage of shorter structures is probably an aesthetic advantage but that is offset by the fact that when the structures are shorter there are more of them, which creates a greater number of obstacles

Construction of the line will not be totally incompatible with development of the coal resources. At present time, the coal companies have been very hesitant to divulge their development plans because of the vagaries of the coal market. It is believed that, if resources are developed at a later date, the transmission lines could be easily relocated

Section D3a has been expanded to elaborate on WAPA's reseeding policy. See also the response to the comment from the Department of Interior (page A-21).

Section C7 has been expanded to show expected noise levels from the line. In the event there is interference, it is normally caused by "loose hardware" and is corrected by tightening the loose connections.

The referenced section of the EIS has been amended and moved to the impact chapter to show that the line will parallel mostly section lines and highways and roads. In North Dakota the PSC will approve the final location of the transmission line.

1. Wood pole structures have fewer component parts than steel structures, require fewer construction personnel, and less time to complete at any one structure site, thereby reducing the number of visits to the site during construction. The number of structures per mile also impacts the above statement; however, the EIS is addressed to a specific site rather than the number of sites per mile.

2. This statement would be true if we were to use one or two legged steel tubular structures. These type structures are only used in locations where the appearance of the structure is an extremely important consideration. If we were to have used steel structures for this line they would be wide base conventional lattice type towers which require concrete foundations for each of the four legs. By using wood pole in lieu of this type of tower the number of visits to each site is reduced.

October 19, 1978

WESTERN AREA POWER ADMINISTRATION RESPONSE

to be avoided in working the land. Consideration should be given to a comparison of an average of 4.5 larger steel structures per mile, with an average 7.5 wood pole structures per mile. The wasted space around each structure may not be much different as this depends on the type of equipment being used.

4. Granted that it is easier to restore wood pole structures in the event of a failure, but it is always a possibility to make a temporary restoration in a line built with steel towers using wood pole structures until the steel structures can be replaced.
5. Replacement cost for wood poles and steel towers is a significant consideration but only a part of the economics of the project. This difference for the North Dakota portion of the project could amount to 1.25 to nearly 2 million dollars, depending on whether you use 35 or 50 years. This should be developed into annual cost consisting of amortizing the original investment, operating cost, maintenance cost, and replacement cost for both steel structures and wood pole structures.

On pages 50 and 51, if historical or archaeological remains are found, the state archaeologist should be notified. If fossils or other paleontological finds are discovered, the state geologist should be notified.

On page 51, although there undoubtedly will be federal funds spent on the North Dakota portion of this project, the location, design, and construction of the North Dakota portion will be handled by MDU. Do the commitments made here and elsewhere in the EIS apply to the MDU portion of the project?

On page 52, the contractor would be required to comply with federal laws, orders, and regulations and laws of the states with respect to water pollution and air pollution. Does this then exempt him from complying with other laws?

On pages 60 to 71, no alternative is mentioned in the Hettinger area to routing through the existing substation and routing the line in close proximity to the city on three sides of it. Consideration should be given to establishing a new substation on the proposed line northwest of the city with a smaller line connecting the new substation to the existing substation and then routing the new line south at a greater distance west of the city.

3. Within the selected corridor the transmission line will be located to avoid cultivated lands, etc. However, it is not uncommon practice for farmers to work through and between the poles of the structure. On page 27 we note that "Location of the transmission line on the farms is expected to have little or no effect on use or valuation of the property."

4. Construction of a temporary wood pole "shoo-fly" around damaged steel structures is a common utility practice to facilitate immediate restoration of steel tower transmission lines. However, the use of temporary "shoo-fly" structures has several disadvantages which do not pertain to repair of wood pole lines. Installing a shoo-fly is time-consuming and costly in requiring duplicate efforts to erect and remove the temporary structures. Removing the shoo-fly also requires a second line outage to disconnect the temporary line and make final connections to replacement steel tower. The most serious problem is that the shoo-fly must be erected off the existing R.O.W. which increases the environmental impacts associated with restoration procedures.

5. The selection of wooden materials rather than steel was made on the basis of installed cost, reduced environmental impacts during construction, and improved aesthetics.

The final EIS has been revised to more clearly identify what WAPA will do if cultural resources are encountered. (See Section D4a)

Montana-Dakota Utilities Co. has read and participated in the preparation of the EIS. The Company is not in conflict with the commitments made in the EIS, and has indicated that they will comply with these commitments.

No. The contractor will have to comply with all laws of whatever state or locale it is working in.

This alternative was not examined as it was not considered a feasible alternative due to the increased cost for development of the new substation. In addition, it would provide a duplication of facilities and a decrease in reliability for loads now served out of the existing Hettinger Substation.

Mrs. Bonnie Banks

-4-

October 19, 1978

WESTERN AREA POWER ADMINISTRATION RESPONSE

The material for the new substation and addition to the existing substation may not be that much more than what is presently proposed. The additional cost of a new substation, both economic and environmental would largely be offset by a reduction in new line length.

On page 73, it is our understanding that the meeting with Bowman County Commissioners was scheduled during a winter storm and was attended by only one commissioner who has since retired.

Montana-Dakota Utilities Co. met with the Bowman County Commissioners on October 17, 1978, for the same purpose.

If you have any questions, please feel free to contact our office.

Sincerely,



Oliver M. Degerness
Environmental Engineer

OMD/ba

A-46

NDSIC FORM B (9/71)

PNRS NO. 28-479

FROM: STATE INTERGOVERNMENTAL CLEARINGHOUSE
STATE PLANNING DIVISION
STATE CAPITOL
BISMARCK, NORTH DAKOTA 58501

Date Received

ENVIRONMENTAL IMPACT STATEMENT TO BE REVIEWED

TO: MR. RUSSELL STUART, COMMISSIONER 662
N.D. GAME AND FISH DEPT. 27
2121 LOVETT AVE.
BISMARCK ND 58505



ISSUED BY: U.S. Department of Energy

DATE: 10-4-78

NAME OF PROJECT: Draft EIS: Miles City - New Underwood 230 Kv Electrical Transmission Line

The attached Environmental Impact Statement is referred to your agency for review and possible comments. If you consider it satisfactory, please check the box labeled, "no comment." Otherwise, please check one of the other appropriate boxes. Your cooperation is asked in completing this memo and returning it to the State Intergovernmental Clearinghouse within 10 days from date of receipt. If no response is received within 15 days of date of notification it will be assumed you have no comment.

A-47

- No comment
- Meeting desired with applicant
- Comments submitted herewith

1. Specific comments which are to be attached to the review statement which will be submitted by the State Intergovernmental Clearinghouse: (Use reverse side or separate sheets if necessary)

2. Reasons why meeting is desired with applicant:

Reviewer's Signature: *Russell Stuart* Date: 2/20/1978
 Title: Commissioner Tele: 224-2180



NORTH DAKOTA GAME AND FISH DEPARTMENT

PHONE - 224-2180

OPTIONAL FILE COPY

OCT 23 1978

NO COPY NECESSARY

INFORMATION

58505

Ed

10/19/78

October 19, 1978

WESTERN AREA POWER ADMINISTRATION RESPONSE

James D. Davies, Area Mgr.
 Western Area Power Administration
 Dept. of Energy
 PO Box EGY
 Billings, Montana 59101

Dear Mr. Davies:

We have reviewed your DEIS regarding a proposed 230 kv power line from Miles City to New Underwood, SD.

We have no serious objection to the proposal. We are, of course, quite concerned that the building of access roads in the Badlands be kept to a minimum; thus we reiterate our earlier recommendation that the line follow U.S. 12 as closely as possible in traversing the state of North Dakota.

We are also concerned about the potential for permanent tree clearing in the right of way. North Dakota has fewer trees than any other state in the Union, and any loss of wooded acreage affects us to a greater extent than other states. We would hope that tree loss in North Dakota could be minimized as well.

Finally, we feel that, if possible, any new access roads to be constructed should be restricted to use by maintenance crews on official business, especially those to be constructed in the Badlands. The potential for erosion and harassment of wildlife can only increase if such roads are left open to public use.

We appreciate the opportunity to comment on this EIS.

Sincerely,

Russell W. Stuart
 Russell W. Stuart
 Commissioner

RWS:lr

A graded access road is not planned for the North Dakota Badlands portion of the line. Wood pole construction allows the use of smaller or lighter equipment, thus reducing the need for a graded access road.

WAPA shares the concern of the Game and Fish Department in preserving as much of the trees along the proposed alignment as possible. However, some removal or trimming will be required. The proposed alignment has been laid out to avoid stands of hardwood where possible.

Public access to the line right-of-way would be limited by private landowners or the land administering agencies. This controlled access will serve to limit the potential for erosion and harassment to wildlife.

- RUSSELL W. STUART
COMMISSIONER
- WILBUR BOLDT
DEPUTY COMMISSIONER
- 78-1324
- H. M. SPITZER
CHIEF, COMPLAINT DIVISION
- DALE MENEGAR
CHIEF, FISHERIES DIVISION
- C. R. GRONDAHL
LEADER, GAME INVESTIGATIONS
- R. L. MORGAN
LEADER, HABITAT DEVELOPMENT
- PERSHING CARLSON
CHIEF, PUBLIC RELATIONS DIVISION

ROOSEVELT-CUSTER

REGIONAL COUNCIL FOR DEVELOPMENT

Telephone (701) 227-1241
Pulver Hall
Dickinson, North Dakota 58601

OFFICIAL FILE COPY

OCT 4 1978

October 2, 1978

APPROVED BY:	DATE:
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622

WESTERN AREA POWER ADMINISTRATION RESPONSE

James D. Davies, Area Manager
Western Area Power Administration
Dept. of Energy
P. O. Box EGY
Billings, Montana 59101

Mr. Davies:

Per your draft of EIS on the Miles City—New Underwood Transmission Line, the following comments are provided for your consideration:

- (1) Page 33-34: Population - Due to recent expanded oil development in the Bowman area, a heavy population increase has taken place particularly in the City of Bowman. Realizing that the 1970 Census provides basic concrete facts, the new rapid growth to Bowman should be recognized. The figure may be closer to 2,500 at this point;
- (2) Page 35: Crop Production - Why a reduction of 10% in crop output?;
- (3) Soils - No mention of soil types was made or their characteristics as to the speed of regeneration or erodibility. Is erosion going to be a problem in the fragile areas of the Little Missouri River?
- (4) Page 60: Outages - How many outages have occurred to date in the area with existing facilities? What is the current stress on available power to area?

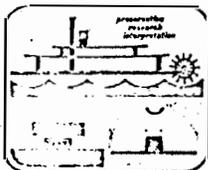
We appreciate the opportunity to respond to the draft.

Yours,
Rod Landblom
Rod Landblom
Executive Director

- (1) The final EIS has been revised to reflect this comment.
- (2) Section C4 gives new data on potential crop reductions. Further analysis shows that the BPA studies were for a line using steel towers (with four legs). Use of wood pole structures should facilitate farming operations over steel structures and cause a lesser impact on crop yields.
- (3) Section B2 of the statement has been expanded to include soil types. Time is important in the formation of a soil. If the materials are easily eroded by wind and water, the soil of steep slopes is destroyed almost as fast as it is formed. On undulating topography, soil formation on these materials and erosion go on at about the same pace. On flat slopes, due to the grass root mat which retards destructive processes, deeper soils develop which are older from the standpoint of soil formation, than are the undulating and rolling soils. Some of the geologic formations traversed by the line are soft and non- to poorly cemented. These formations are easily erodible in the natural state. Montana-Dakota Utilities Co. has an existing transmission line through this area, and, based on their experience, they do not expect erosion to be a problem for the proposed route.
- (4) The section has been revised to more clearly reflect the comment. Also, Chapter A has been revised to more clearly define the load growth of the area which represents the current stress on the existing system.

A-49

RL/ck



State Historical Society

of north dakota

LIBERTY MEMORIAL BUILDING - BISMARCK, NORTH DAKOTA

April 4, 1979

APR 9 1979

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62200		

Mr. James D. Davies
Area Manager
Western Area Power Administration
Department of Energy
Post Office Box EGY
Billings, Montana 59101

Re: State Historic Preservation Officer comments - 230 kv Transmission
Line from Miles City, Montana to New Underwood, South Dakota
(OOE/EIS-0025-D)

Dear Mr. Davies:

In accordance with Section 106 of the National Historic Preservation Act of 1966 (50 Stat. 915, 16 U.S.C. 470), Executive Order 11593, "Protection and Enhancement of the Cultural Environment" (36 FR 8921, 16 U.S.C. 470), Advisory Council on Historic Preservation's "Procedures for the Protection of Historic and Cultural Properties" (36 CFR Part 800), the National Environmental Policy Act of 1969 (83 Stat. 852, 42 U.S.C. 4321) or Office of Management and Budget Circular A-95, the North Dakota State Historic Preservation Office (State Historical Society of North Dakota) has reviewed the project referenced above.

The review indicated that although the Western Area Power Administration (WAPA) has recognized possible effects to cultural resources in the proposed transmission line's area of impact, it is the opinion of this office that the full range of cultural resources existing within the impact area has not been identified and, consequently, that the total level of environmental impacts cannot yet be assessed. We are pleased to note that an intensive on-the-ground cultural resources survey will be professionally conducted of the project's center line. This survey should answer many of the current cultural resource related unknowns and the actions proposed to further protect cultural resources identified during the referenced survey and those that may be identified during construction appear to be adequate, as based on currently known cultural resources:

Therefore, the North Dakota State Historic Preservation Officer does not raise objection to the proposed action at this time but requests that the North Dakota State Historic Preservation Office be kept advised of the continued planning

WESTERN AREA POWER ADMINISTRATION RESPONSE

As noted in Section D4a of this final EIS, a cultural resource study within the proposed right-of-way for the line is underway.

A cultural survey of the proposed alignment will identify what resources exist and the data will be provided to the State Historic Preservation Officer of the three states affected.

Mr. Davies
Page 2
April 3, 1979

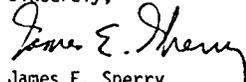
WESTERN AREA POWER ADMINISTRATION RESPONSE

process and, most specifically, be given an opportunity to review and comment on the professional report of the anticipated cultural resources survey. Because the functions of the State Archeologist and State Historic Preservation Officer reside in the same office in this state, it is our further request that all future correspondence be addressed to the State Historic Preservation Officer.

Following conclusion of our review of the survey results and of our review of WAPA's analysis of effects on cultural resources known after the survey, this office will be pleased to submit further comment.

If you have any questions regarding the above comments please contact Mr. Walter Bailey of our staff at (701)224-2672.

Sincerely,



James E. Sperry
State Historic Preservation Officer
(North Dakota)

Future correspondence will be addressed to the State Historic Preservation Officer as requested.

A-52

JES/je

LW

STATE PLANNING BUREAU
State Capitol
Pierre, South Dakota 57501
605/773-3661

Office of the
GOVERNOR
Executive Management

NOV 9 1978

NO. INVENTORY	Initial	Date

Ellis
Baker *Nov*
82200

WESTERN AREA POWER ADMINISTRATION RESPONSE

November 3, 1978

James R. Davies, Area Manager
Western Area Power Administration
Department of Energy
P.O. Box EGY
Billings, MT 59101

RE: EIS 030379
Draft EIS, Miles City-Baker-Rettinger-New Underwood 230-KV
Transmission Line, Pick-Sloan Missouri Basin Program,
DOE/EIS-0025-D

Dear Mr. Davies:

The State Clearinghouse has distributed for review the above stated draft environmental impact statement. No comments indicating any problems were received. However, the following question was received which we desire to be addressed: "Are there any alternative sources of electrical power that could be used to meet the power needs of the area?"

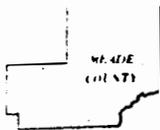
Thank you for providing us with the opportunity to review and comment on this environmental impact statement.

Sincerely,

Steve Merrick
Steve Merrick
Commissioner
STATE PLANNING BUREAU

SM:jrr

The power needs of the area are now provided by existing powerplants which are remote from the proposed line. There is no local generation at the locations served by the line. Also, there is no new generating resources associated with this line.



Meade County Planning and Zoning Office

1425 SHERMAN - STURGIS, SOUTH DAKOTA 57785 - PHONE 347 2463

A-56

WESTERN AREA POWER ADMINISTRATION RESPONSE

November 27, 1978
NOV 30 1978

James D. Davies, Area Manager
Western Area Power Administration
Department of Energy
P.O. Box E G Y,
Billings, Montana 59101

NOV 30 1978	Initial	Date
8:00		

Dear Sir:

After reviewing the draft environmental statement for the Miles City - Baker - Hettinger - New Underwood 230 - KV Transmission Line, Pick-Sloan Missouri Basin Program the Meade County, South Dakota Planning and Zoning Commission agreed that as far as they know now, the benefits from this line minimize the impact on the environment.

No response necessary.

Basil Boylan, Chairman
Meade County Planning
and Zoning Commission

BB/ra

C. G. Spies
Box 239
Syracuse, N. Y. 13201

2 October 1978

James D. Davies, Area Manager
Western Area Power Administration
Department of Energy
Box EGY
Billings, Montana 59101

Re: 620 652.

Subject: Draft Environmental Impact Statement
Miles City-New Underwood, 230 kV electrical transmission line

Dear sir:

My interest is with potential bird mortality. While "Conductors and grounded hardware on the line will be placed far enough apart (6.7 meters or 22 feet) to preclude accidental electrocution of large birds" (p. 45), "There would be some occasional loss of bird life as a result of collision with structures or conductors, particularly where the line crosses the rivers where intermittent woody areas and water attracts birds" (p. 55).

The Final EIS should note that collision mortality could be minimized if guyed structures were not used near stream crossings and wetlands. Also, if the transmission line crossed streams and wetlands immediately adjacent to highway crossings, with other factors such as wetland width or streamside vegetation given consideration, mortality might be further minimized.

Thank you for the opportunity to submit my comments. Please send me a copy of the FEIS when it is available.

Christian Spies
Christian Spies

13201

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OCT 5 1978
NO EXEMPTION
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WESTERN AREA POWER ADMINISTRATION RESPONSE

Similar comments were presented by the U.S. Department of the Interior. While unguyed towers would be preferable from a bird collision situation, there would be some question as to their structural stability. Field observation of other existing transmission lines seem to indicate that bird loss in the area will not be severe due to collision.

Stream crossings are normally made as nearly at right angles as possible, therefore, guyed structures are not anticipated adjacent to far stream crossings.

A-55

RICHARD LANE HOGAN, D.D.S.
1812 CLARK AT HIGHWAY NO. 10
MILES CITY, MONTANA 59301

December 5, 1978

Mr. James D. Davies, Area Manager
Western Area Power Administration
P. O. Box E. G. Y.
Billings, Montana 59101

Dear Mr. Davies:

Here is to inform you of my legal protest to the placement of your proposed powerline longitudinally through my property (Sections 29 and 30, 8 N., 48E.)

Our property is just outside the city limits and was purchased by us as an investment to subdivide which we are in the process of doing. Our neighbors have already subdivided their properties and some of their sites are already sold and built on. One of our neighbors to the south (Mr. Krutzfeldt) is even developing a recreation lake, horse stables, etc. So your intent to swing east through our property is unjustly condemning some potentially very valuable land, which we had counted on as an investment.

A more logical, commonsense approach is to follow the corridor which is already established running parallel to the Interstate - (at present there are 4 -- yes, I said 4 separate lines running through another part of my property - Section 25, 8 N., 47 E. - thereby condemning it for any other use); then swing east out of that corridor when a few more miles further north where the land value would not be as volatile and affected by the proximity of town.

Furthermore, your present method of compensating a landowner for condemning his property and preventing it from being developed in any other fashion on a permanent basis is ridiculous to the point of being intolerable when applied to land volatile in nature. Nobody but a fool would tie up land permanently in an area appreciating this rapidly for literally nothing. Any use of land of this type would have to be evaluated annually and the fee adjusted annually to the surrounding area. Permanent easements, of course, is out.

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REPLY OR OTHER ACTION TAKEN	
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B0100	
B2200	

WESTERN AREA POWER ADMINISTRATION RESPONSE

Landowners are compensated for any reductions in value of their land as indicated in Section D2e of this final EIS.

This route has been examined and is included as alternate H 4 d 1 in the statement. This alternate was not used as it would pass through a water spread development, which has potential for future irrigation, and through an established hay cropland.

Landowners are compensated for any reductions in value of their land as indicated in Section D2e of this final EIS.

The easement for this multi-million dollar facility is purchased in perpetuity or until abandonment of the line, at which time the easement would revert to the record title holder. The easement is purchased in perpetuity at the current market value of the land at the time the easement is acquired. At the present time, WAPA does not have the authority to deviate from this procedure

78-1518

RICHARD LANE HOGAN, D.D.S.
1812 CLARK AT HIGHWAY NO. 10
MILES CITY, MONTANA 59301

-2-

The enclosed map shows the existing corridor of condemnation loaded with lines. (Note at end) Why go east in your presently proposed fashion and ruin more of my land? Stay in the existing corridor until further out of town and away from property which is appreciating unbelievably due to the proximity of town.

Furthermore your proposed route, in a true display of efficiency, has lit upon the roughest piece of terrain for miles around. This means expensive construction and expensive maintenance for you and a continual nightmare of damage and torn up real estate to the landowner.

Yours truly,


RICHARD LANE HOGAN, D.D.S.

Note: There has been one more line since this map was made.

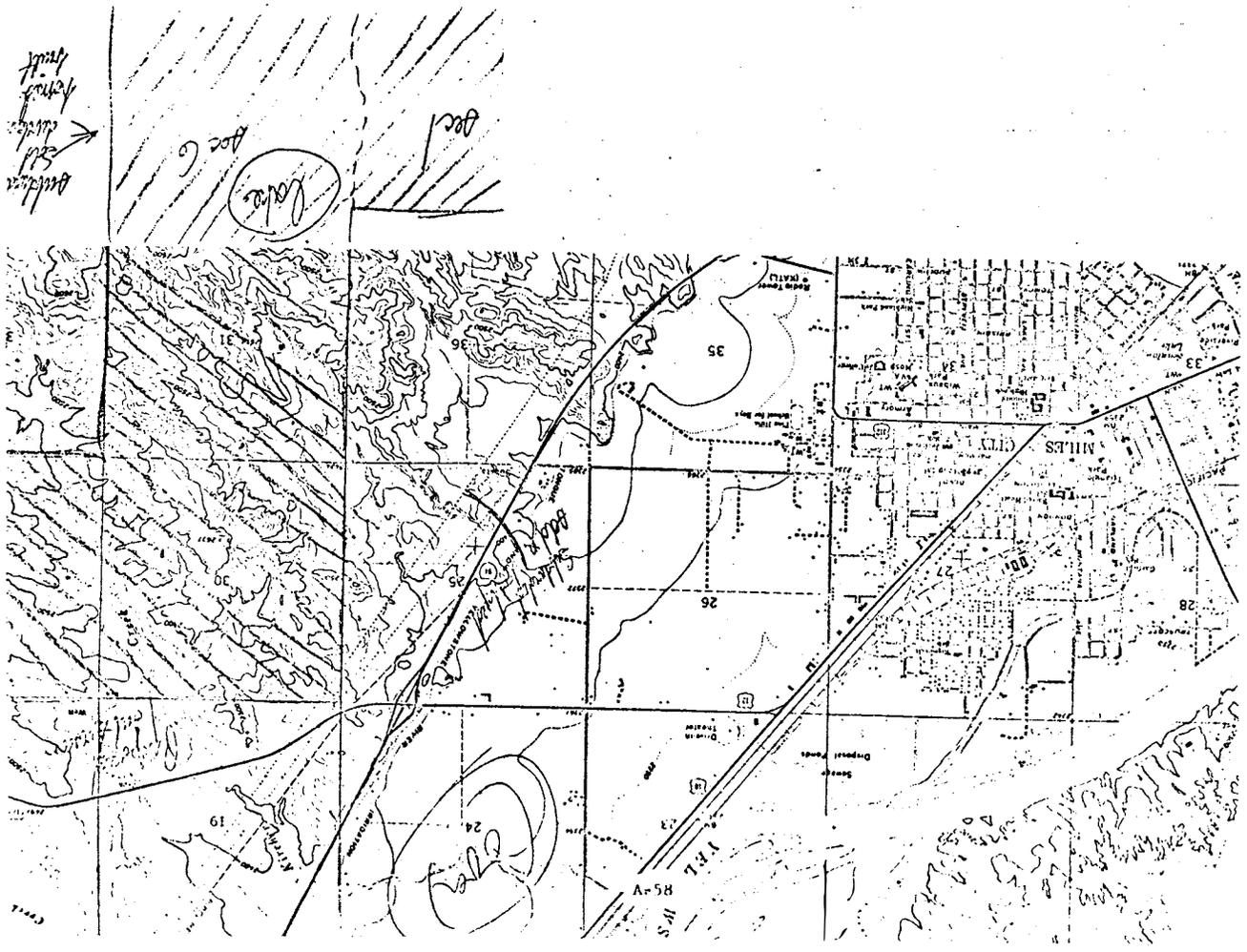
cc: Mr. Ron Marlenee
Mr. John Melcher

WESTERN AREA POWER ADMINISTRATION RESPONSE

See response to the second paragraph on page A-56 for response to this comment.

To go north to avoid the rugged terrain would add many miles to the line. It would be fruitless to attempt to avoid the rugged terrain by diverting the line to the south. Maintenance to a particular portion of the line would be at five-year intervals.

Sec 1 & 6 at bottom
 are signed Quilt Cave the
 homes are already built
 lake going in for recreation,
 Bureau of Outdoor Recreation Funds
 This of course makes whole
 area valuable.



Miss City Mont
Dec 6, 1978

Mr. Jones D. Davies, Area Manager
Western Area Power Admin.

Box EGY
Billings, Mont.

BOED
B2200
B2250

Dear Mr. Davies:

This is my letter of protest concerning the sort of the line you are proposing through my property.

I suggest you follow the easement you already have and not destroy the commercial value of the subdivided land that I have left

Halpl Lutzman
Miss City, Mont.

W-1522

See page A-56 for response to similar comments.

DECEMBER 7, 1978

WESTERN AREA POWER ADMINISTRATION RESPONSE

James D. Davies
Area Manager of
Western Area Power Admin.
Dept. of Energy
P.O. Box EGY
Billings, Montana
59101

132200	12/12
132201	
132000	12/13

Dear Sir;

I was just informed, by a fellow property owner, that the route for the Miles City-New Underwood 230 KV transmission line project has been decided upon.

As owner of SW $\frac{1}{4}$, SW $\frac{1}{4}$, SE $\frac{1}{4}$, Range 47E, M.P. Meridian, Custer County, State of Montana, I was never informed of this decision. Thus I do not know how I will be affected. If the power line runs according to the route I was told, this would virtually render my property useless for the purpose for which I purchased it.

This property has very good sub-division potential and is thus pretty valuable land for your intended use.

Secondly, why isn't the present power line right-of-way followed until less valuable land is reached?

Thirdly, a flat one time payment for the right-of-way would not be satisfactory with me because I do not think this would be a just compensation. I would be more inclined to think along the line of a yearly lease based on the market value of the land at the time of the lease.

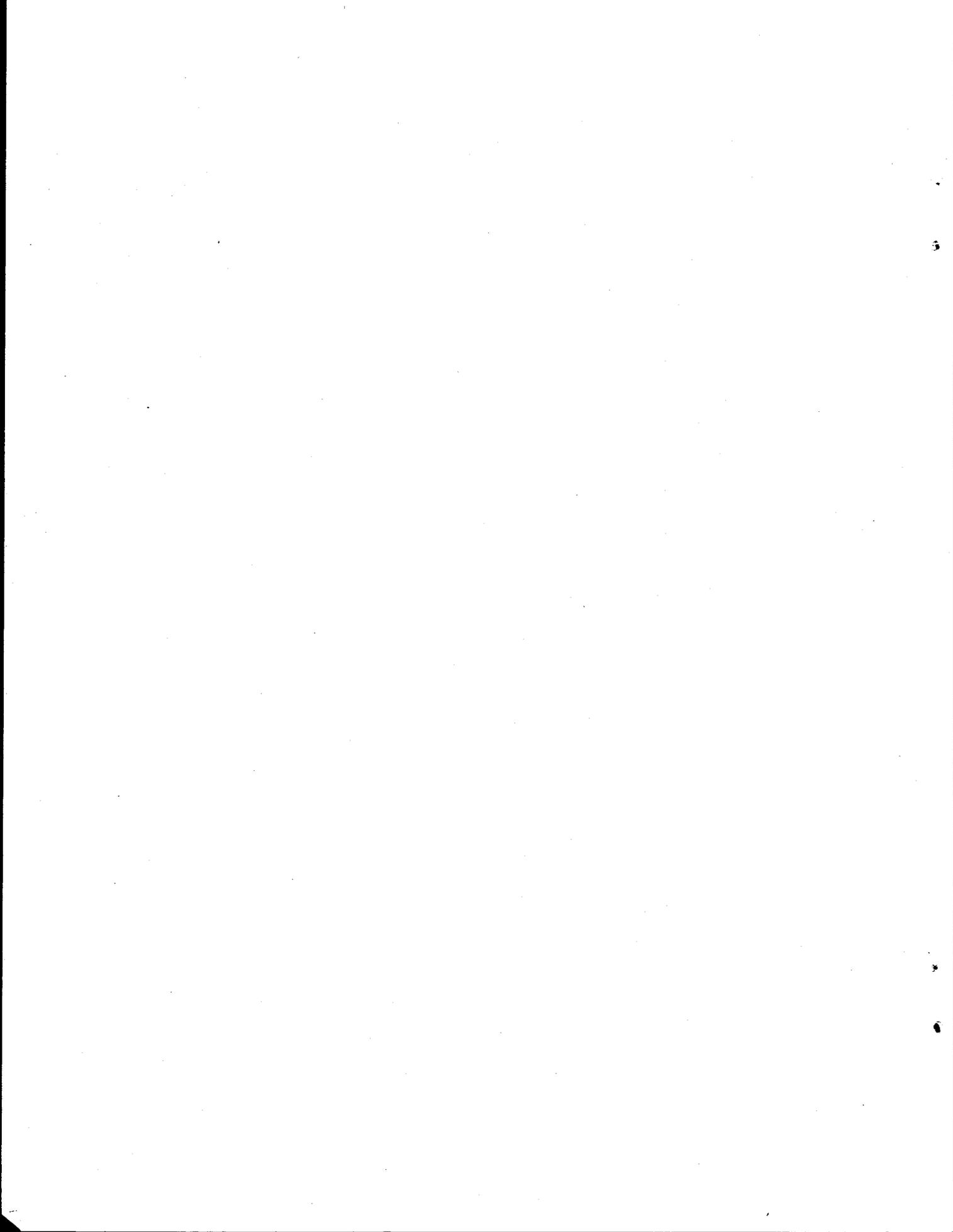
I am sending a copy of this to my U.S. senator and representative with a letter of explanation.

See page A-56 for response to similar comments.

Sincerely,
James R. Bundy
James R. Bundy

78-1531

APPENDIX B



PUBLIC HEARING - MILES CITY, MONTANA

After opening remarks by WAPA representatives, Mr. Leonard Roberts of Miles City, Montana, expressed concern over land and crop damage during preconstruction and construction of the transmission line. While these types of damage are avoided in most cases, sometimes land and crop damage do occur. In these cases, the Government is liable and compensates the landowner for all damages on the right-of-way. The contractor is responsible for damages off the right-of-way. Affects on farming during construction and maintenance are discussed in the EIS in Chapter C, Section 4. Mr. John Beardsley and Mr. Lawrence Steffes asked how the transmission line easement affects oil and mineral rights and who would bear any relocation costs. The WAPA easement does not include oil or mineral rights. The transmission line may require temporary relocation for excavation of minerals. This relocation will not be at Government expense. It is our practice to require the landowner or excavating agency pay the cost of transmission line relocation. The easement fee considers the known minerals. Consequently, this fee is higher than if no minerals are present. Recovery of oil usually would not require line relocation. If it would, this also would be at landowner of drilling agents cost.

PUBLIC HEARING - HETTINGER, NORTH DAKOTA

After opening remarks by WAPA representatives, Mr. Norlen Torgerson of Hettinger, North Dakota, desired to know the exact location of the line on his property and his neighbors Anna Pettit, Mrs. Milton Mueller, and Mr. Earl J. Halvorson. The proposed transmission line will not cross Mr. Torgerson's, Anna Pettit's, Mrs. Milton Mueller's or Mr. Earl J. Halvorson's land. Mr. Torgerson representing himself and his neighbors also expressed concern over affects of the transmission line on farming during and after construction. Similar questions were asked by Mr. Roberts during the Miles City hearing. Our response is the same. Mr. Torgerson indicated specific problems with past non-Government construction of transmission lines interfering with his farming activity. Normally, no restrictions are placed on Government contractors as to work activity or construction schedules within the Government right-of-way. During planting and harvesting this sometimes runs into some conflict causing the farmer inconvenience and additional time. Mr. Torgerson expressed his and his neighbors concerns with large birds colliding with the power line conductors and dying. These items are discussed in the EIS in Chapter C, Section 5. Mr. Torgerson and his neighbors thought a yearly easement fee should be arranged instead of a one-time payment. See page A-56 for a response to a similar comment for annual payments for right-of-way easements. Mr. L. A. Stolzenberg asked what rights were actually purchased by the Government with the right-of-way. The Government purchases the right to construct, operate and maintain a transmission line. We do not acquire title to the land. Mr. Rod Landbloom asked if we had met with the Bowman County Commissioners. Montana-Dakota Utilities Co. had met with them on October 17, 1978. Mr. Landbloom also wanted to know the reason for the reduction in wheat yield expected as stated in the draft EIS on page 35.

This reduction may result from mechanical means such as overworking of soil, seed loss, overfertilization, overlapping coverage of weed control chemicals, and harvest losses. Mr. Torgerson expressed his and his neighbors concern over radio interference under the transmission line. Radio frequency interference is discussed in the EIS in Chapter C, Section 7.

PUBLIC HEARING - BISON, SOUTH DAKOTA

After opening remarks by WAPA representatives, Mr. L. A. Stolzenberg of Hettinger, North Dakota, representing a group of neighbors expressed concern about the transmission line interfering with their farming operation and asked if it would be possible to locate the transmission line on the half line. Interference to farming was discussed in response to Mr. Leonard Robert's questions during the Miles City Public Hearing. An attempt is made to spot the transmission line to conform with landowner wishes. Access to the line is required for operation and maintenance. Especially during adverse weather conditions this makes it highly desirable to locate the transmission line in proximity to a highway or county road in order to minimize road and trail construction. Mr. Stolzenberg indicated a fear of ozone created by the transmission line and their causing damage to personnel, livestock, etc. Ozone creation and its anticipated affects are addressed in the EIS in Chapter C, Section 7. Mr. Stolzenberg also indicated a concern over visual affects and the appearance of the transmission line on the horizon. Visual affects are discussed in the EIS in Chapter C, Section 3. Mr. Stolzenberg also questioned if he could put a fence across the right-of-way. Yes that is possible. A gate would be installed allowing WAPA access to maintain the line. Locks are not placed on these gates unless requested by the landowner. Dual locks are possible and often used. Thus, the gates are available for use by the landowner. Mr. Hubert Adcock indicated his concern over interference with gas and oil leases. The same comments apply as were expressed over Mr. Beardsley and Mr. Steffes concerns at the Miles City Public Hearing. Existing installations will be avoided in the initial route selection. Mr. Merle Bastian asked to know the clearance from the transmission line conductor to ground. Under maximum loading and temperature which causes the greatest conductor sag, the minimum clearance from conductor to ground will be 26 feet. Mr. Albert Hoff desired the exact location of the line on his property. The line will be located on the $\frac{1}{2}$ line in two sections (33 and 4) and on a diagonal in Section 9. (Section 33, T 19N, R 12E; Sections 4 and 9, T 18N, R12E). Mr. Hoff advised that the initial routing was moved to its present location as he requested.