# CHAPTER 1 PURPOSE, NEED, AND BENEFITS

# 1.1 INTRODUCTION

This chapter discusses the existing and projected congestion in the Western Power Grid and describes in detail the purpose, need, and benefits of the proposed Mountain States Transmission Intertie (MSTI) 500 kilovolt (kV) Project.

NorthWestern Energy (NorthWestern), a regulated investor owned utility serving 650,000 customers in Montana, Nebraska and South Dakota, proposes to build and operate a 500kV electric transmission line from Townsend, Montana to the Midpoint Substation near Shoshone, Idaho, by 2013.

This transmission line will meet the requests for transmission service from customers, other utilities, new generators and power marketers. The Project will relieve current constraints in the high voltage transmission system in the western United States (U.S.).

The MSTI Project will enhance the capability of the power grid that supplies energy to millions of people and businesses in the western U.S. every day. It would not only meet the energy needs of consumers but would also accommodate the transmission requirements of new generation facilities such as clean coal and wind.

MSTI is a direct response to the growing need for electricity in the western U.S. and the requirements of the National Energy Policy Act of 2005 that took significant steps to strengthen the nation's electric power grid. Within the National Energy Policy Act of 2005, Congress authorized mandatory reliability and interconnection standards and directed the Department of Energy (DOE) to conduct a nationwide study of electric transmission congestion on the high-voltage grid. This study, which was completed in August 2006, identified electrical congestion on the existing transmission path between southwestern Montana and Idaho.

In addition, many western states have passed Renewable Portfolio Standards (RPS) which require utilities to use clean renewable energy to meet their energy needs. Subsequently, governors in the western states have called for the availability of 30,000 megawatts (MW) of clean, diversified energy from the Western Power Grid by 2015.

Figure 1-1 shows the shows the Project area, the substation endpoints and the alternative transmission line routes being considered for the MSTI Project. In addition, many other routing alternatives were considered and eliminated during the evaluation process.



Figure 1.1-1 Project Area and Alternative Transmission Line Routes

# **1.2 SUMMARY OF PURPOSE, NEED AND BENEFITS**

The proposed MSTI Project will:

- Respond to customer requests for new transmission capacity;
- Strengthen the Western Power Grid through additional transmission capacity and improved reliability, flexibility, and performance;
- Relieve congestion on the existing facilities identified in the DOE 2006 Congestion study;
- Meet the growing demand for electricity and economic development of the region;
- Provide energy diversification, bi-directional transmission capacity, market competition, and supplier choice to Montana, Idaho and the western region;
- Create positive economic impacts along the corridor including job opportunities, renewable energy development and opportunities for competitive energy markets in Montana, Idaho and beyond; and
- Increase the local tax base, providing much needed funding for schools and other critical infrastructure.

# 1.3 BACKGROUND

# 1.3.1 RECENT LEGISLATIVE AND REGULATORY ACTIONS

The regional transmission system in the Northwest has become increasingly stressed by the lack of adequate bulk transmission capacity. Unprecedented changes in the electric utility industry have uncoupled the historical linkages between new generation development and the need for more transmission. Recent legislative and regulatory actions have paved the way for a competitive wholesale electric generation market that depends on a strong transmission system to flourish (WGA Transmission Working group 2001).

- Sections 368 and 1221 (a) and (b) of the National Energy Policy Act of 2005 enacted by Congress in 2005 took important steps to strengthen the nation's electric power grid. Congress authorized mandatory reliability and interconnection standards and directed the DOE to conduct a nationwide study of electric transmission congestion of current systems. The study was completed in August 2006. The study identified a broad range of critical geographic areas that face potentially serious challenges for ensuring reliable and cost effective electric delivery. One of the congestion areas identified in the study was the Montana, Idaho and Northwest Region.
- Section 216 of the Federal Power Act (FPA) was added as a result of Section 1221(a) of the National Energy Policy Act of 2005. Section 216 of the FPA directed the Secretary of Energy to conduct a nationwide study of electric transmission congestion. In August 2006, the DOE released its first congestion study in response to the new law. The study, entitled the National Electric Transmission Congestion Study examined congestion and transmission constraints in the U.S. portions of the Eastern and Western Power Grid. In the study, DOE described that "Congestion occurs when actual or scheduled flows of electricity on a transmission line or a related piece of equipment are restricted below desired levels, either by

the physical or electrical capacity of the line, or by the operational restrictions created and enforced to protect the security and reliability of the grid." The term "transmission constraint" according to DOE may refer either to a piece of equipment that limits electricity flows in physical terms, or to an operational limit imposed to protect reliability (DOE 2006).

- Governors in the western states called for 30,000 MW of clean, diversified energy in the Western Power Grid by 2015. The Westerns Governors Association 2007 Annual report stated that the Western states are well on their way to meeting, and likely exceeding, regional goals of adding 30,000 MW of clean, diverse energy by 2015, increasing energy efficiency by 20 percent by 2020, and developing plans to ensure reliable, safe transmission for 25 years (WGA 2007).
- Many western states have passed Renewable Portfolio Standards (RPS). For example, the Washington's electorate adopted Initiative 937 in late 2007, mandating a 15 percent RPS for the majority of load in the State by 2020, not including the existing contribution of hydro generation. The federal Wind Energy Production Tax Credit has been extended through 2008 and is likely to be extended again. These and other incentives are driving new generation development projects in the Northwest, specifically in resource rich Montana, in an effort to transport the renewable energy to the load centers located further west and south.
- Governors in the western states have encouraged new and improved transmission planning efforts in the West. These planning efforts have helped support a long list of new transmission expansion projects including five large multi-state proposed projects (WGA 2007).

Preparation of the 2006 DOE Congestion Study involved an exhaustive review of information and data collected from numerous resources; thus, the DOE report is heavily relied on and frequently referenced in this Chapter. Some of the information resources used to reach the results presented in the 2006 DOE Congestion Study includes the following:

- Consultation with state and regional entities;
- Notice of Inquiry (NOI) in the Federal Register;
- A public technical conference in Chicago, Illinois;
- Public meetings throughout the preparation phase of the congestion study;
- Review of historical congestion and previously documented transmission-related studies; and
- Simulated modeling.

The majority of the documents reviewed for the Western Power Grid were prepared by regional and sub-regional transmission planning study groups. Over 35 documents were reviewed. The review culminated in comparison of historical data with the simulated data. The DOE study identified congested areas and recommended specific projects to relieve the congested areas through 2015. The proposed MSTI Project would alleviate some of the existing and projected congestion identified in the DOE Study.

## **1.3.2** NORTHWESTERN ENERGY (NORTHWESTERN)

NorthWestern, like many utilities in the west, is challenged with increasing electrical demand and usage of the transmission system, which will place increased pressure on system reliability. This challenge is common and compounding across the U.S. NorthWestern is part of the Western Electricity Coordinating Council (WECC), which encompasses nearly 1.8 million square miles. It is the largest and most diverse of the 10 regional councils of the North American Electric Reliability Council (NERC). The Western Power Grid covers all or parts of 11 Western states (Washington, Oregon, Idaho, Montana, Wyoming, California, Nevada, Utah, Colorado, Arizona, and New Mexico), two Canadian provinces (British Columbia and Alberta), and northwest Mexico.

The transmission reliability in the Western Power Grid is different than much of the Eastern Power Grid. High capacity transmission lines connecting generation to load centers stretching over long distances without significant load in between is much more prevalent in the west than in the east. This fact makes the potential reliability problem that is faced by the west more transient stability related, whereas thermal overloading of transmission facilities is the predominant problem that the eastern utilities face. The transmission system in Montana is no exception to this difference.

NorthWestern's electric operations in Montana provide regulated transmission and distribution services to 322,000 customers in 187 communities, over an area of approximately 97,540 square miles. The Montana electric transmission system consists of over 7,000 miles of transmission lines and associated terminal facilities, and interconnects with five major transmission systems located in the WECC Region, and another system that connects with the Mid-Continent Area Power Pool (MAPP) region (Weiler 2006).

NorthWestern's predecessor in Montana, the Montana Power Company, was a vertically-integrated electric utility with a low-cost hydroelectric resource base from its earliest beginnings into the 1970s. However, by the mid-1980s, that changed as a result of the development of the Colstrip generating complex. Colstrip consists of four baseload, coal-fired generating units with an aggregate net (i.e. after deduction for station use) capacity of 2,100 MW. Colstrip was developed by Montana Power and other regional utilities to serve their respective regulated loads.

The jointly owned CTS transmits each owner's share of the output of the Colstrip generating project to their load. The CTS consists of two 500kV transmission lines extending approximately 115 miles from Colstrip, Montana to a substation near Broadview, Montana, and continuing approximately another 133 miles to the point on the CTS near Townsend, Montana where the ownership changes to the Bonneville Power Administration (BPA). Because the CTS' primary purpose when constructed was to move power from Colstrip to the Pacific Northwest, only a limited amount of transmission capacity exists on the 500kV and 230kV transmission system from Colstrip to the NorthWestern control area. In addition, a transmission agreement between BPA and the Colstrip owners governs the movement of energy from the CTS out of the NorthWestern control area.

In 1999, Montana Power divested essentially all rate-based electric generation facilities by sale to PPL Montana (approximately 1,250 MW). In 2001, Montana Power sold the electric and gas utility business (electric transmission lines and natural gas pipelines) to NorthWestern. NorthWestern acquired a transmission system in eastern Montana that was originally built around low-cost hydroelectric facilities, but is now dominated by coal-fired generation. This coal-fired generation serves customer loads to the west of the Colstrip generation. Because a significant portion of power produced at the Colstrip facility is transported across the CTS to the Pacific Northwest and to Montana loads west of the Colstrip generation, power typically flows from East to West on NorthWestern's Montana transmission system (Weiler 2006).

Figure 1-2 to the right provides a graphical overview of NorthWestern's transmission system in the context of the WECC region. This system, with voltage levels ranging from 50,000 to 500,000 volts, serves an area covering approximately two-thirds of Montana. The system has interconnections to five major transmission systems<sup>1</sup> located in the WECC and MAPP regions through WAPA's direct current (DC) interconnection. NorthWestern is registered with NERC as a Balancing Authority, Planning Authority and Transmission Planner. NorthWestern does not currently own generation used to serve retail customer load.

# 1.3.3 MONTANA IMPORT AND EXPORT PATHS (INCLUDING MT-ID PATH)

NorthWestern has three export paths out of Montana:

- Montana to Northwest WECC Path 8
- Montana to Idaho WECC Path 18
- Montana to Southeast WECC Path 80

The existing import and export path ratings shown on Figure 1-3 were established under optimistic conditions, which mean that an export rating may have been developed when other paths were importing. Thus, summing the path rating is not appropriate and will not yield the simultaneous import or export capability of the paths taken together.



Figure 1-2 NorthWestern Transmission System and WECC Region

WECC's Path 18 is currently comprised of two, fully subscribed transmission lines: a 230kV line (Mill Creek – Antelope) and a 161kV line (Dillon Salmon – Big Grassy). These two lines have a combined rating of 337 MW of transmission capacity.

<sup>&</sup>lt;sup>1</sup> The five interconnected systems are Idaho Power Company, Avista Corporation, Bonneville Power Administration, WAPA and PacifiCorp.

- The 230kV line is jointly owned by NorthWestern, PacifiCorp and Idaho Power Company (IPCO). NorthWestern owns the facilities located in Montana, while PacifiCorp and IPCO own the remainder of the line in Idaho. The three parties share the approximately equal portions of the 250 MW transmission capacity in the joint facility from northwestern Montana to southern Idaho.
- The 161kV line is owned by NorthWestern in Montana and IPCO in Idaho. Each party owns 100% of the 87 MW of the transmission capacity in its respective state.



Figure 1-3 Import and Export Path Ratings

NorthWestern is the operator of Path 18 and has reported that Path 18 has experienced uncontrolled flow problems in the past. NorthWestern, PacifiCorp and Idaho Power are jointly funding the installation of a phase-shifting transformer (PST) in the 230kV line at Mill Creek. This PST will be used to control the 230kV flows. The 161kV line already has a PST installed at Jefferson, Idaho.

The DOE 2006 Congestion Study identified that additional flow in the area of Path 18 from Montana to the south is desired. Furthermore, new transmission facilities are required to expand the Montana-to-Idaho corridor to satisfy service requests. The MSTI 500kV Project would address this need by transferring low cost capacity from Montana, south into Idaho along WECC's Path 18 (Montana to Idaho Corridor). Figure 1-4 shows the principal transmission lines in the western U.S. (WECC).



Figure 1-4 Principal Transmission Network in the WECC Region

Source: Western Electricity Coordinating Council

#### **1.3.4 MONTANA INTERNAL PATHS**

In addition to NorthWestern's external paths, NorthWestern has internal paths shown in Figure 1-5 below. The South of Great Falls path is the only internal path not rated through the WECC Path Rating Process.



Figure 1-5 NorthWestern Internal and External Paths

# **1.4 PURPOSE OF THE PROJECT**

The overall purpose of the MSTI 500kV Project is to:

- 1. Respond to transmission service requests (TSRs) to move power from Montana to Idaho; and
- 2. Provide future opportunity to transfer low cost energy resources in Montana to concentrated load centers in WECC.

Recent passage of State RPS' makes it abundantly clear that access to new generation in Montana can be key to satisfying this need. Without MSTI, the RPS new generation needs will be satisfied from other areas within WECC.

#### 1.4.1 RESPOND TO CUSTOMER REQUESTS FOR TRANSMISSION CAPACITY

The existing path between Montana and Idaho, Path 18, is fully subscribed today and into the future. With this understanding, NorthWestern conducted an Open Season Process in December 2004 to identify potential interest for new transmission capacity between the Montana and Idaho path. TSRs were accepted on NorthWestern's Open Access Same-time Information System (OASIS) for new capacity between Montana and Idaho. This "new" path has now been named MSTI. NorthWestern received TSRs that far exceed the capability of the existing transmission system.

NorthWestern's Open Season consisted of three phases:

- Phase 1: The initial expression of interest period. NorthWestern announced their plans for transmission expansion and asked for parties (generators, suppliers, load serving entities) to come forward with statements of interest for new transmission services from October 1-31, 2004. These parties were asked to specify the amount of capacity needed (in 25 MW blocks), the direction of service, a start date, and the term of service. At the conclusion of Phase 1, NorthWestern reviewed the level of interest and made a determination that there was adequate market demand to support their Open Season process.
- Phase 2: Began in mid-November 2004, with a posting of the time period to accept TSRs for the Open Season process. From December 1<sup>st</sup> to December 31<sup>st</sup>, 2004, NorthWestern solicited TSRs from Montana to Idaho as point of receipt (POR) or point of delivery (POD) for new transmission capacity. The Open Season solicitation involved the same process as a TSR under NorthWestern's Section 17 Open Access Transmission Tariff except for two elements: (1) the initial deposit with the application was delayed; and (2) the system impact study and study fee was waived. Existing NorthWestern customers with previously completed applications for transmission capacity were deemed part of the Open Season process.
- Phase 3: After the closing date of December 31<sup>st</sup>, NorthWestern began a study that examined the size of line (i.e., 230kV, 345kV and 500kV) and the transmission upgrades in Montana to move the power from its source to the northern terminal of the new line from Montana to Idaho.

NorthWestern initially received 17 OASIS requests totaling 2,250 MW of expressed interest. Using this information, NorthWestern designed a high level study that would provide cost information regarding the need for transmission system improvements to move all or a part of the 2,250 MW to Idaho. This information was provided so the Open Season respondents could decide whether to proceed to the next level of study by funding their Open Season request. After NorthWestern presented the results of this high level study, 850 MW of continued interest remained from the original participants. For those participants that elected to continue to the next phase, more studies have proceeded into the WECC Regional Planning Process and the Northern Tier Transmission Group (NTTG) planning process.

In the fall of 2006, NorthWestern conducted a siting study and prepared a preliminary engineering report for the Montana to Idaho pathway. The study included determining alternative routes, various voltage options, Alternating Current (AC) vs. Direct Current (DC), design criteria, conductor and structure selection, and estimated costs on the various options. NorthWestern commenced the siting,

permitting and environmental process for the Project in the spring of 2007. As part of the Montana Major Facility Siting Act (MFSA) process, NorthWestern named the line the Mountain States Transmission Intertie (MSTI) and issued a press release in June 2007 announcing the details of the proposed new transmission line.

As a result of this announcement, NorthWestern received 500 MW of additional TSRs for a current total of 1,350 MW of capacity on the proposed MSTI transmission line, which was formerly called the Montana to Idaho 500kV pathway. The proposed Project would address the requests from customers for transmission capacity by providing up to 1,500 MW of available new capacity.

Subsequent to these changes, NorthWestern has received additional revisions to the TSRs to reduce the requests to 640 MW. NorthWestern is in a marketing effort to seek additional requests for transmission service.

## 1.4.2 PROVIDE A TRANSMISSION PATH FOR NEW GENERATION DEVELOPMENT

NorthWestern is an exporting control area with approximately 3,300 MW of existing generation and about 1,700 MW of load. Montana is also a resource rich state with approximately 3,400 MW of potential generation in NorthWestern's study generation interconnection queue (Figure 1-6). Approximately 1,630 MW of wind, 770 MW of natural gas, 78 MW hydro and 968 MW of coal generation has been proposed in NorthWestern's interconnection queue. The conclusion from Figure 1-6 regarding Montana's load and resource balance shows that for every MW of new generation that is added within NorthWestern's control area a MW must be exported to load elsewhere in the west through NorthWestern's 3 export paths (MT-Northwest, MT-Idaho and MT-Southeast).



Figure 1-6 NorthWestern Load and Generation Resources

Proposals for new generation to be built in Montana and load growth outside of Montana provide a clear indication that additional transmission out of Montana is necessary. It is not easy to relocate generation plants or to redirect load growth to new locations; therefore, a new transmission project that moves power from generation sources in Montana to loads located south of Montana is necessary.

#### 1.4.2.1 Montana's Natural Resources

Montana is resource rich in coal, gas, oil and wind. Some of the largest coal deposits in the nation are beneath the prairie lands of eastern Montana and western North Dakota. In 1998, coal leases on these lands produced more than 28 million tons of coal and royalties in excess of \$36 million (BLM 2007). Montana has one-third of all the coal deposits in America and eight percent of all the coal in the world (Alter 2007). Presently, there are six major coal mines in Montana, five mining subbituminous coal and one mining lignite coal. The subbituminous coal mines are located in Big Horn, Rosebud, and Musselshell counties. They are identified below:

- Decker Coal Company in Decker, Montana
- Spring Creek Coal Company in Decker, Montana
- Western Energy Company in Colstrip, Montana
- Bull Mountain Mine in Roundup, Montana
- Westmoreland Resources in Hardin, Montana

The lignite mine is the Westmoreland Savage Corporation in Savage, Montana (Richland County), on the Montana-North Dakota border (MCC 2007). Of the major U.S. coal mines, Western Energy Company's Rosebud Mine was ranked 11<sup>th</sup> of 53 in 2005 with a production of 13,376,542 short tons, and Spring Creek Coal Company's Spring Creek Mine was ranked 12<sup>th</sup> with a production of 13,119,202 short tons. With regards to enabling new resource development, specifically coal, the data collected for the DOE 2006 Congestion Study clearly indicate that only a limited amount of output from new generation capacity could be delivered from the sources (Wyoming and Montana in the Western Power Grid) to markets using existing transmission facilities without causing new congestion problems. In some areas upgrades are already required to meet nearby requirements (DOE 2006).

Montana has five natural gas basins. One of the largest is the Montana Thrust Belt. Using a geologybased assessment methodology, the U.S. Geological Survey estimated a mean of 8.6 trillion cubic feet of undiscovered natural gas, a mean of 109 million barrels of undiscovered oil, and a mean of 240 million barrels of natural gas liquids in the Montana Thrust Belt Province of northwestern Montana (USGS 2002).

Wind Powering America indicates that Montana has wind resources consistent with utility-scale production. Good to excellent wind resource areas are distributed throughout the eastern two-thirds of Montana. The region just east of the Rocky Mountains in northern Montana has excellent to superb wind resources. Other outstanding resource areas are on the hills and ridges between Great Falls and Havre. The region between Billings and Bozeman also has excellent wind resource areas. Ridge crest locations have the highest resource in the western third of Montana. In addition, small wind turbines may have applications in some areas (DOE 2006). Renewable Northwest Project (RNP) indicates that Montana alone has enough potential wind resources at 116,438 average MW to supply one quarter of the electricity needs of the U.S. (RNP 2006).

Montana also has good, useful solar resources, for flat-plate collectors, especially in the southern region of the state. The Renewable Energy Atlas of the West estimated the annual solar electricity generation potential in Montana to be 101 billion kilowatt hours (kWh) (DOE 2006).

#### 1.4.2.2 Transferring the Natural Resources Out of Montana

In 2004, the Rocky Mountain Area Transmission Study (RMATS) recommended various methods to increase the transfer of capacity in resource rich Montana to demand centers in other regions of the WECC. The recommendations included projects within the RMATS footprint (Montana, Idaho, Wyoming, Utah, and Colorado) and also outside of the RMATS footprint.

Within the RMATS footprint, three projects were recommended to serve load in the Rocky Mountain Area in the near term that will provide significant benefit. One of the proposed projects is the addition of a phase shifter on the line between Montana and Idaho to increase transfer capacity from Montana (RMATS 2004).

Three significant transmission expansion projects entirely within the RMATS footprint were recommended. These projects are identified as (1) the Montana System Upgrades Project, (2) Expansion of the Bridger 345kV transmission system, and (3) the Wyoming to Colorado Transmission (TOT 3) Project. These three projects would allow exports of power from the RMATS region (RMATS 2004). The Montana System Upgrade Project does not include any new transmission lines. The proposed upgrades include increases in series compensation in the 500kV lines from Colstrip to Taft, addition of a 500/230kV autotransformer at Colstrip, and the addition of two new substations on the 500kV transmission system near Ringling and Missoula, Montana (Table 1-1). The improvements would increase the transfer capacity by an estimated 500 MW (RMATS 2004).

| Interface               | Transmission Addition  | Before          | After           | Incremental |
|-------------------------|------------------------|-----------------|-----------------|-------------|
|                         |                        | (Reverse) –     | (Reverse) –     | (Reverse) – |
|                         |                        | Forward         | Forward         | Forward     |
| West of Colstrip        | Added Series Capacitor | N/A - 2,598     | N/A – 3,098     | +500        |
| West of Broadview       | Added Series Capacitor | N/A – 2,572     | N/A – 3,072     | +500        |
| Montana to<br>Northwest | Added Series Capacitor | (1,350) – 2,200 | (1,350) - 2,700 | +500        |

Table 1-1 Capacity Additions with Montana System Upgrade Project

Source: RMATS 2004.

The proposed MSTI Project would provide another needed pathway for capacity in Montana to be directed to south. The MSTI Project would allow for the export of power from the north to the south and further relieve the existing and projected congestion in the area.

The MSTI Project would be instrumental in fulfilling RMATS Recommendation 2 - *Projects Extending Beyond the RMATS Footprint*. The MSTI Project would provide a pathway to transfer needed capacity from resource rich Montana to demand centers in Utah, Northern California and Oregon. Three new 500kV transmission lines originating from Midpoint in Idaho are recommended in the RMATS. Figure 1-7 shows the proposed 500kV transmission lines originating from the Midpoint Substation in Idaho.

The MSTI Project would permit the transfer of low cost energy resources from Montana into the Midpoint Substation which is proposed to connect with the proposed projects in the RMATS: the Idaho to Las Vegas Line (Midpoint to Market Place; i.e., Southwest Intertie Project (SWIP)); the

Idaho to North California line (Midpoint to Telsa), and the Midpoint to Oregon line (Midpoint to Grizzley). Thus the MSTI Project would significantly strengthen the integrated Western transmission system.



Figure 1-7 Montana Capacity Transfer to Utah, California and Oregon Source: RMATS 2004.

# 1.5 NEED FOR THE PROJECT

# 1.5.1 CHANGING TRANSMISSION USE

The migration from vertically integrated "markets"<sup>2</sup> to regional markets has changed and will continue to change the needs, uses and dynamics of regional transmission. The increasing regional nature of the grid resulting from open access and integrated resource plans seeking renewable sources to fulfill Integrated Resource Plan (IRP) standards adds uncertainty in the decisions that transmission investors must make. This is especially true for transmission investments that would provide widespread benefits to consumers in multiple state jurisdictions. In part, this is the motivation Federal Energy Regulatory Committee (FERC) had in passage of FERC Order 890 requiring coordination of local planning with sub-regional/regional planning. In addition to this instant filing,

<sup>&</sup>lt;sup>2</sup> To increase competition in the electric utility industry, many utilities no longer have generating resources (i.e., vertically integrated), but instead purchase their power on a wholesale contract basis from "suppliers". NorthWestern owns limited generation, so is therefore not considered to be "vertically integrated".

NorthWestern has engaged the MSTI Project into WECC Path Rating and planning processes and the Northern Tier Transmission Group (NTTG) biennial planning process.

In 2006 the NTTG was formed to establish a sub-regional planning process that would meet the needs of its members by coordinating the operation and expansion of transmission to serve customers and wholesale power markets. The footprint of the NTTG study is shown in Figure 1-8 to the right. NorthWestern participates in sub-regional and regional transmission reliability planning studies through NTTG and WECC, respectively. One main objective of the NTTG planning process is to integrate the individual transmission plans of the NTTG utilities and other participating organizations into one comprehensive 10-year sub-regional transmission expansion plan for the NTTG footprint. This comprehensive plan, which will be updated on a biennial basis, is intended to take into account all participating transmission providers' current and anticipated service commitments to wholesale Network and Point-to-Point Transmission Service customers, and to Native Load customers. It will also address strategic transmission options and alternatives for reinforcing the transmission system, as well as integration of new generation and reducing congestion.



Figure 1-8 Northern Tier Transmission Group Member Transmission Facilities

NorthWestern is a member of WECC and supports the work of the WECC Transmission Expansion Planning Policy Committee (TEPPC). NTTG may utilize the WECC TEPPC for consolidation and completion of congestion and economic studies, base cases, and other regional planning. NTTG may coordinate with other neighboring sub-regional planning groups directly, through joint study teams, or through the regional process.

Under Open Access, transmission owners are required, subject to contractual rights and capacity availability, to make excess capacity on their transmission systems available to third party users. Section 1.4.1 describes the Open Season process that NorthWestern recently initiated.

# 1.5.2 Relieve Congestion on the Existing Facilities

The Montana to Idaho path, Path 18, is fully subscribed into the future. This congestion will be relieved by the MSTI 500kV Project.

Annually the WECC develops a Power Supply Assessment (PSA) that analyzes the load and resource balances for the region. The 2007 PSA (Final Draft: 17 September 07) result reaffirmed a "North-South split" between Montana and Idaho, which has been demonstrated in many electrical congestion studies over the past twenty (20) years. For example, this result confirms earlier PSA results and the conclusions from the RMATS study showing that there is reoccurring congestion between Montana and Idaho.

This North-South split occurs when the transmission system between the Northwest/British Columbia/Montana (the North) and the areas to the south (the South) is insufficient to allow all reported surpluses north of the constraint to meet the loads south of the constraint in the economic dispatch performed in the System Analyst Model (SAM). This congestion between Montana and Idaho will be addressed by the MSTI.

With significant potential for new resource development in Montana, additional transmission must be developed. Increasing the capacity of Path 8 by new transmission line construction is not practical because limited availability exists for a new transmission line corridor. The mountainous Western Montana and Northern Idaho regions coupled with National parks, wilderness areas and tribal lands makes a new corridor impractical. Existing transmission lines in Montana utilizes lower elevation mountain passes and valleys. Locating transmission lines in mountainous areas can require construction of substantial new access road systems and because of snow accumulation, can limit access during winter months should a line fail. Figure 1-9 shows the distribution of national parks, wilderness areas, and wild and scenic rivers.



Figure 1-9 Selected Special Management Areas in Montana

Note that some wilderness areas (e.g., Gates of the Mountains National Wilderness Area), a primitive area (e.g., South Fork Tribal Primitive Area), and a national recreation area (e.g., Rattlesnake National Recreation Area) were designated long after transmission lines were built within their boundaries. Routing a new line through such areas may be considerably more difficult today than

when existing lines were first constructed. In addition, since most of the existing lines were constructed, habitat for newly listed threatened or endangered species will play an important role in siting new transmission lines. When all these constraints and concerns are considered, few if any unconstrained options exist for siting a new line from eastern Montana where most new generation assets will be located. This new generation will have to cause an increase in our export to markets outside Montana since the Montana area load is growing more slowly than the generation capacity (NorthWestern 2008).

DOE describes congestion in the West as more tightly focused geographically, and in some areas more contingent upon the development of new generation resources. The DOE performed modeling for the Western Interconnection, which identified current and projected congestion on the western transmission paths.

The maps in Figure 1-10 are taken from the DOE 2006 National Electric Transmission Congestion Study. The map on the left in Figure 1-10 shows the current congestion around Path 18. Many of the Paths (6, 16, and 20) including Path 18 experience actual load flows that exceed 75% of the Operating Transfer Capacity (OTC) between 0 and 25% of the time (indicated by the white bar). Paths 8 and 17 are experiencing load flows that exceed 75% of the OTC between 25 and 50% of the time (indicated by the blue bar) while Path 19 has a load flow that exceeds 75% of the OTC greater than 50% of the time (indicated by the red bar).

The map that follows (Figure 1-10) indicates that Paths 8, 9, 19, and 20 are all identified as congested paths (indicated by the red bar) in the DOE's Case Simulation for 2015. The DOE's 2015 Case Simulation reflects integrated resource plans developed by utilities and state renewable portfolio standards, as well as certain planned transmission lines that would support the development (DOE 2006).

The DOE 2015 Case Simulation includes both new generation and the transmission required to deliver that production. Without the transmission the new generation would be trapped behind the constraints (DOE 2006). The DOE also implies that if the new transmission lines are not constructed it is likely that the new generation would not be developed.

The proposed action would alleviate some of the historical, current and projected congestion in the Western Interconnection Region. The MSTI Project would provide another path to transfer the plentiful generation resources out of Montana, into Idaho and other areas in the Western Interconnection Region that are identified as congested in the DOE 2006 Congestion Study. The three categories of congested areas identified by DOE are: Critical Congestion Areas, Congestion Areas of Concern, and Conditional Congestion Areas (see Table 1-2).

| Category                    | Area                    |
|-----------------------------|-------------------------|
| Critical Congestion Area    | Southern California     |
| Congestion Areas of Concern | Seattle - Portland Area |
|                             | San Francisco Bay Area  |
|                             | Phoenix – Tucson Area   |
| Conditional Congestion Area | Montana - Wyoming       |

Table 1-2 Western Interconnection Congestion Areas



#### Figure 1-10 Current and Projected Congestion in the Western Interconnection Region

Source: National Electric Transmission Congestion Study, DOE 2006

The Conditional Congestion Areas are defined by DOE as "…areas where significant congestion would result if large amounts of new generation resources were to be developed without simultaneous development of associated transmission capacity." These areas are known to be of considerable interest for possible development of wind, nuclear, or coal fired generation to serve distant load centers. The DOE also states in the 2006 Congestion Study that "Timely development of integrated generation and transmission projects in these areas will occur only if states, regional organizations, Federal agencies, and companies collaborate to bring these facilities into existence."

The MSTI 500kV Project will not alleviate all of the congestion in the Western Interconnection Region but it is part of the overall solution that will enable low cost energy to be transferred out of resource rich Montana into the load centers which require a more robust and highly reliable transmission system. Action is required to reduce load flow on existing paths and redispatching generation between sources is currently necessary until the overload on existing paths is resolved (DOE 2006).

#### **1.5.3 IMPROVE TRANSMISSION SYSTEM PERFORMANCE AND FLEXIBILITY**

The flexibility of the transmission system will also be improved by strategic location of the MSTI northern terminus. NorthWestern evaluated three possible termination points on the CTS: Garrison, Townsend, and Broadview (Figure 1-11). Of these three, Townsend was determined to be preferred because this location:

- 1. Will enhance system performance, whereas the other two will not; and
- 2. Provides a strategic collector system terminal for generation development.



#### Figure 1-11 Northern Terminus Location

The MSTI Project can enhance transmission system performance. At Townsend, where the ownership changes from the Colstrip Transmission Committee to the BPA, the 500kV configuration

changes from two individual 500kV circuits in separate rights-of-way from Colstrip to Townsend, to two circuits on a single tower from Townsend to the west. The lines between Broadview and Garrison are continuous since Townsend demarks the ownership change and not a substation where the 500kV lines east and west of Townsend can be sectionalized from each other. The likelihood of loosing both 500kV circuits simultaneously due to an event such as lighting is much greater when they are on a single tower (i.e., west of Townsend) than when they are in separate rights-of-way (i.e., east of Townsend). Today, the simultaneous loss of both 500kV lines is the loss of both Broadview to Garrison lines because that is where the 500kV lines will be sectionalized. This will change when MSTI's 500kV substation is placed at Townsend. Sectionalizing the 500kV lines for the credible loss of both 500kV circuits will be at Townsend (not Broadview). This will increase transmission system performance because the point where the 500kV line will be sectionalized is further away from the major generation source at Colstrip. Thus, the voltage swings following the simultaneous loss of both 500kV circuits after an outage will be somewhat less, thereby improving system performance.

A MSTI northern terminal at Townsend provides a strategic collector system terminal for new generation development. At Townsend the MSTI collector system can be developed by upgrading the existing 500kV line and/or building new 230kV (or larger) transmission lines that terminate at the Townsend substation (Figure 1-12). The ultimate build out for the 230kV collector system will obviously be driven by the location of new generation, but the existing queue suggests that the Great Falls, Judith Gap, Martinsdale and Columbus/Reed Point areas are the most likely areas for new wind development.



Figure 1-12 Strategic Collector System for New Generation

In addition to the strategic location of the MSTI northern terminus, the routing of MSTI past the existing Mill Creek Substation provides a strategic opportunity for MSTI to provide access to loads in the western part of Montana; access to Northwest loads through Path 8 (both the 500kV and 230kV); and will act as a collection point for future generation development in southwest Montana. The combination of a northern terminus at Townsend, and a substation near Mill Creek offer the greatest flexibility for future transmission needs.

The regional transmission flexibility would be improved by the MSTI Project by creating a 500kV loop to the Northwest. Currently, the 500kV lines to the Northwest from Montana and Idaho are not connected by major transmission (i.e., 500kV). After MSTI, a 500kV loop forming a "triangle" (i.e., Townsend – Midpoint – NW – Townsend) would be created. This loop would greatly enhance the ability to move power to the Northwest.

The MSTI Project will comply with both NERC and WECC standards and when combined with the other proposed projects. The MSTI 500kV Project would help to improve the WECC transmission system reliability and flexibility by serving the load centers with low cost energy and also by relieving congestion on the existing transmission lines in the region.

## 1.5.4 MEET THE REGIONAL ELECTRICAL DEMAND

NorthWestern's transmission system was originally designed and constructed along with generation resources in an integrated manner, primarily to meet load-serving requirements. As a result, the existing transmission system was not designed and cannot accommodate significant new generation interconnection without the addition of new transmission infrastructure. This potential for new generation development in Montana can be used to serve significant load growth outside of Montana only if new export transmission capacity is developed. The WECC 2007 Power Supply Assessment Case #1 shows the power-supply margins (i.e., surplus or deficiency) by sub-region. Case #1 is for the summer peak load growth with existing generation, generation retirements and planned generation additions that are currently under active construction and projected to be in-service by January 2011.

| A3         | 2222111611 |                     |                     |                     |                     |                      |                      |                      |                      |
|------------|------------|---------------------|---------------------|---------------------|---------------------|----------------------|----------------------|----------------------|----------------------|
| Sub-Region | 2008       | 2009                | 2010                | 2011                | 2012                | 2013                 | 2014                 | 2015                 | 2016                 |
| Canada     | 2,250      | 2,084               | 1,761               | 1,487               | 1,246               | 935                  | 593                  | 322                  | <mark>-158</mark>    |
| Northwest  | 8,038      | 7,615               | 7,303               | 6,864               | 6,413               | 5,830                | 5,422                | 4,979                | 4,521                |
| Basin      | 0          | 0                   | 0                   | <mark>-231</mark>   | <mark>-537</mark>   | <mark>-920</mark>    | <mark>-1,248</mark>  | <mark>-1,628</mark>  | <mark>-1,849</mark>  |
| Rockies    | 0          | <mark>-44</mark>    | 0                   | <mark>-154</mark>   | <mark>-502</mark>   | <mark>-851</mark>    | <mark>-1,241</mark>  | <mark>-1,653</mark>  | <mark>-2,045</mark>  |
| Desert SW  | 0          | <mark>-944</mark>   | <mark>-1,829</mark> | <mark>-2,956</mark> | <mark>-4,016</mark> | <mark>-5,042</mark>  | <mark>-6,037</mark>  | <mark>-7,091</mark>  | <mark>-8,065</mark>  |
| No. CA     | 0          | <mark>-26</mark>    | 0                   | <mark>-488</mark>   | <mark>-984</mark>   | <mark>-1,488</mark>  | <mark>-1,970</mark>  | <mark>-2,484</mark>  | <mark>-3,084</mark>  |
| So. CA/MX  | 0          | <mark>-1,206</mark> | <mark>-1,714</mark> | <mark>-2,494</mark> | <mark>-3,341</mark> | <mark>-4,093</mark>  | <mark>-4,992</mark>  | <mark>-5,895</mark>  | <mark>-6,934</mark>  |
| Surplus    | 10,288     | 9,699               | 9,064               | 8,351               | 7,695               | 6,765                | 6,015                | 5,301                | 4,521                |
| Deficit    | 0          | <mark>-2,220</mark> | <mark>-3,543</mark> | <mark>-6,322</mark> | <mark>-9,380</mark> | <mark>-12,394</mark> | <mark>-15,487</mark> | <mark>-18,752</mark> | <mark>-22,135</mark> |

 Table 1-3 Power Supply Margin (MW) by Sub-Region for WECC Power Supply

 Assessment Case # 1

The yellow shaded negative numbers in Table 1-3 above show the years when the sub-region is deficient. It is clear from this table that areas south of Montana will need significant amounts of new generation, which could be supplied in part from Montana generation.

A clear focus of new generation addition is fulfilling the requirements of the Renewable Portfolio Standards. States with Renewable Portfolio Standards (RPS) are shown in Figure 1-13. These states have set standards specifying that electric utilities generate a certain amount of electricity from renewable sources.



Figure 1-13 States with Renewable Portfolio Standards

Most of these requirements take the form of "renewable portfolio standards," or RPS's, which require a certain percentage of a utility's power plant capacity or generation to come from renewable sources by a given date. In May 2008 the Western Governors' Association held a kick-off meeting to launch the Western Renewable Energy Zones (WREZ) project. "The goal of the WREZ is to generate: 1) reliable information for use by decision-makers that supports the cost-effective and environmentally sensitive development of renewable energy in specified zones, and 2) conceptual transmission plans for delivering that energy to load centers within the Western Interconnection. A number of factors will be considered, including the potential for development, timeframes, common transmission needs and costs. The project will evaluate all feasible renewable resource technologies that are likely to contribute to the realization of the goal in <u>WGA's policy resolution</u> that calls for the development of 30,000 megawatts of clean and diversified energy by 2015." Montana with it significant potential for renewable resource development can play a role in fulfilling the RPS requirements and the 30,000 MW WREZ goal only if additional transmission export capacity is developed. NorthWestern's MSTI transmission project can provide up to 1500 MW of renewable resource into the region.

Significant load growth in the areas south and west of Montana is occurring. MSTI would provide a path so that these loads can achieve access to sources of power in Montana. However, MSTI by itself would not have direct access to most load centers. However, MSTI is not alone in new transmission development. MSTI and other 500kV projects are being planned for as shown in Figure 1-14. These proposed transmission projects are part of the first NTTG biennial transmission plan. These projects include the Hemmingway to Boardman Transmission Project, the Hemingway to Captain Jack Transmission Project, the Southwest Intertie Project (SWIP) North, the MSTI Project, the Gateway West Transmission Project, the Gateway South and TransWest Express, the Gateway Central

Transmission Project, and the NorthernLights Transmission – Inland Project. The NTTG's subregional planning process is described in three charters: planning, transmission use, and cost allocation which are available on the NTTG website (http://www.nttg.biz).



Figure 1-14 Proposed Transmission Projects

As explained in Section 1.4.1, NorthWestern has received new TSRs that far exceed the capacity of the existing transmission system. The new TSRs fall into two main groups. The first involves a group of requests for point-to-point (PTP) transmission service from eastern Montana to an interconnection with BPA in western Montana. These requests were made primarily by (1) proposed new generation projects and (2) marketers that intend to obtain power in eastern Montana and deliver it to loads west of Montana (Weiler 2006).

The second group of TSRs were submitted in conjunction with NorthWestern's Open Season. These requests, many of which are related to a planned generation project, involve WECC Path 18, a fully subscribed transmission path that is jointly owned by NorthWestern, IPCO, and PacifiCorp and extends from the southwestern portion of NorthWestern's Montana system to southern Idaho. In essence, these Open Season transmission requests would require an expansion of the transmission capacity between Montana and Idaho. Some, but not all, of these requests would originate in the eastern portion of NorthWestern's Montana transmission system and require additional system strengthening (Weiler 2006).

As indicated in Section 1.4.2.1, Montana is a resource-rich state with an abundance of coal reserves and favorable wind patterns that can support new thermal and renewable generation resources; there are more than 3,400 MW of proposed new generation in NorthWestern's generation interconnection queue. The MSTI Project would address the request for capacity and assist the WECC in meeting the regional electrical demands by providing transmission to allow the transfer of low cost energy resources out of Montana and into concentrated load centers.

# 1.6 BENEFITS OF THE PROJECT

# 1.6.1 **REGIONAL BENEFITS**

There is very limited southbound access by generation and load customers between Montana and Idaho via Path 18 since this path is fully subscribed today. This congestion will continue into the future.

MSTI will serve the needs of existing and future Montana generation and customers. The NorthWestern balancing area is exporting power most of the time because the amount of generation is about double the load within the balancing area. The amount of proposed new generation in NorthWestern's interconnect and TSR queue is about equal to the amount of existing generation that is operational today.

The NTTG projects serve a broader regional (i.e. WECC) purpose. These projects allow access to new generation in Montana and Wyoming, which are intended to serve the growing loads in Utah, Idaho, Nevada, California, Oregon and Washington.

MSTI would:

- provide significant opportunity for customers, utilities and states to gain access to Montana renewable sources of power to fulfill their required RPS;
- relieve existing congestion on NorthWestern's three paths Path 8 (Montana to Northwest), Path 18 (Montana to Idaho), and to some extent Path 80 (Montana to Southeast); and
- provide a path between proposed Montana generation, and load growth south of Montana.

The RMATS study identified significant regional benefit by reliving the congestion between Montana and Idaho, thereby providing customers access to low cost generation within Montana.

MSTI would:

- relieve the Montana to Idaho (Path 18) congestion identified in the 2006 DOE Congestion Study;
- represent a significant upgrade of the Pacific Northwest 500kV system by closing an important 500kV loop in the Pacific Northwest; and
- follow one of the few non-mountainous routes out of Montana to important commercial hubs near load centers.

Generation (e.g., renewables) is built where the fuel source exists and the power moved to load centers over the transmission grid. NorthWestern is obliged under NorthWestern's FERC tariff to provide requested transmission service for generation and wheeling customers.

Generic benefits of investment in transmission expansion identified in the RMATS report include:

- Improved access for utilities to lower cost power;
- Greater liquidity and price competition in power markets, including mitigation of generator market power;
- Increased ability of generators to diversify fuels used to serve their customers, which can help minimize fuel price risks and broaden access to renewable resources;
- Tax, revenue and other economic benefits to communities and states where development takes place; and
- Improved reliability and greater flexibility for maintenance, and other operational purposes.

These generic benefits would be met with the MSTI Project. The following sections describe the specific benefits of the proposed MSTI 500kV Project. The MSTI 500kV Project is expected to provide energy diversification, provide bi-directional transmission capacity, and provide a positive economic impact along the corridor in Montana and in Idaho.

## 1.6.2 **PROVIDE ENERGY DIVERSIFICATION**

The Northern Tier Projects are comprised primarily of 500kV lines designed to connect the energy resource-rich regions of the Inland Northwest with the customer loads of the Pacific Northwest and Southwest, and the growing demands of Intermountain population centers. (NTTG, Annual Planning Report, 2007).

The RMATS points out that it is often assumed that fuel diversity means greater reliance on fuels other than natural gas. By diversifying fuels, generators can mitigate gas price risks. Further, new access can be provided to renewable resources helping to reduce risks and costs, stabilizing customer prices, and meeting environmental policy objectives, including RPS (RMATS 2004).

Fuel diversity benefits of new transmission investments can flow to utilities and their customers. The size of benefits may depend on the value of reduced fuel price volatility to the generator; how risks and costs are calculated; and on incremental costs to utilities of alternatives for meeting RPS, risk management goals and environmental policy objectives (RMATS 2004).

The MSTI 500kV Project would allow the import of lower-cost generation into areas where additional resources are need for reliability. In addition, the imported generation may contribute to the reduction and stabilization of the cost of supplying electricity to consumers.

# 1.6.3 PROVIDE BI-DIRECTIONAL TRANSMISSION CAPACITY

NorthWestern is in the process of obtaining a path rating of the MSTI project through WECC. As proposed, the 500kV Project will have a 1,500 MW north to south rating and a 950 MW south to north rating.

#### **1.6.4 PROVIDE MARKET COMPETITION AND INCREASE SUPPLIER CHOICE**

Transmission congestion always has a cost. When constraints prevent delivery of energy from less expensive sources, energy that is delivered from more expensive sources must be used instead (DOE 2006).

In concept, by relieving congestion, liquidity in energy markets will increase and competition will become more robust. This may lead to lower and more stable prices, especially in short-term markets, and may help to mitigate exercise of generator market power, creating benefits which flow to utilities and their customers within and outside the RMATS region.

RMATS has identified and recommended potential upgrades and expansions to the transmission system in nine western states. The economic analysis shows these projects could produce lower costs to the extent the lower production costs are translated into lower wholesale prices throughout the western interconnection (RMATS 2004).

MSTI would enhance access to major Northwest load centers as the amount of generation in NorthWestern's Balancing Area increases and as Montana to Northwest (Path 8) congestion increases. MSTI, combined with other NTTG projects can provide export opportunity to the Northwest.

MSTI would serve the need for generation outside of Montana. MSTI would enhance the arbitrage opportunity between generation outside Montana and loads inside or outside Montana. MSTI would improve the ability of Pacific Northwest generation to flow through Montana to Idaho providing an alternative path (in addition to Path 18). The opportunity to move power from Montana south into Idaho is limited today since Path 18 (Montana to Idaho) is fully subscribed. MSTI would enhance the opportunity for power transfers between Alberta and Idaho (and further south) through the Montana Alberta Tie Ltd. (MATL) transmission line.

## 1.6.5 PROVIDE A POSITIVE ECONOMIC IMPACT

Construction of the MSTI Project would provide positive economic impacts including the tax revenues to local tax districts from Project construction and right-of-way purchases, and job opportunities associated with Project construction.

In addition, construction of new wind farms and other power plants would provide economic development benefits in terms of jobs and increased tax revenues to the State of Montana and local communities hosting the plants. Tax revenue benefits for the state and localities include: increased property taxes; additional franchise taxes; higher utility tax revenues; increased state and local income taxes, along with secondary and tertiary induced and indirect economic benefits; and resulting taxes flowing from the investments.

# 1.7 PLANNING REQUIREMENTS (AUTHORIZATIONS AND PERMITS)

Table 1-4 lists the required federal, state (Montana and Idaho) and local agency approvals, reviews and permits for the MSTI 500kV Transmission Line Project.

| Action Requiring<br>Permit, Approval or<br>Review  | Permit/Approval   | Accepting<br>Authority/Approving<br>Agency              | Statutory Reference   |
|--|---|---|---|
| FEDERAL  |   |   |   |
| Power Line Construction<br>and Operation on Land<br>Under Federal<br>Management                        | Right of Way<br>(ROW) Grant/Plan<br>of Development<br>Approval  | BLM   | FLPMA 1976 (PL94-579)<br>USC 1761-1771 and<br>43 CFR 2800                                       |
| Power Line Construction<br>and Operation   | Special Use Permit  | Forest Service  | 36 CFR Part 251 Subpart<br>B  |
| National Environmental<br>Policy Act (NEPA)<br>Compliance to Grant<br>ROW and FS Special<br>Use Permit | Environmental<br>Impact Statement<br>(EIS)  | BLM and FS  | NEPA, CEQ 40 CFR Part<br>1500-et. seq.  |
| Construction, operation<br>and abandonment of<br>transmission lines across<br>or within highway ROWs   | Permit to cross<br>Federal Aid<br>Highway   | Federal Highway<br>Administration (FHWA)                | 23 CFR 1.23 and 1.27<br>USC Sections 116, 123,<br>315 (23 CFR Part 645<br>Subpart B), 23 CFR 77 |
| Grant of ROW by BLM  | Endangered<br>Species Act<br>Compliance by FS<br>and by FWS<br>Biological<br>Assessment (BA)<br>and Biological<br>Evaluation (BE) | U.S. Fish & Wildlife<br>Service                         | Endangered Species<br>Act Section 7<br>Consultation   |
| Grant of ROW by BLM  | National Historic<br>Preservation Act<br>Compliance<br>Section 106  | BLM and State Historic<br>Preservation Office<br>(SHPO) | National Historic<br>Preservation Act of<br>1966, 36 CFR part 800,<br>16 USC 47                 |
| Tower location and<br>height relative to air<br>traffic corridors                                      | Notice of Proposed<br>Construction or<br>Alteration   | Federal Aviation<br>Administration (FAA)                | 49 USC 1501<br>13 CFR 77 Objects<br>Affecting Navigable<br>Airspace                             |

| Action Requiring<br>Permit, Approval or<br>Review   | Permit/Approval  | Accepting<br>Authority/Approving<br>Agency               | Statutory Reference   |
|---|--|--|---|
| FEDERAL (cont.)   |  |  |   |
| Fill in a Wetland   | 404 Permit;<br>Nationwide 12 and<br>33   | Army Corps of<br>Engineers                               | Clean Water Act<br>Section<br>404   |
| Grant of ROW by BLM<br>through Idaho National<br>Laboratory (INL)   | INL consultation<br>and concurrence<br>of BLM Grant of<br>ROW                              | Department of Energy<br>INL                              | MOU between<br>Department of Energy-<br>Idaho Operations<br>Office and BLM April,<br>2003 |
| Approval of Rates for<br>transmission in interstate<br>commerce for<br>jurisdictional utilities,<br>power marketers,<br>power pools, power<br>exchanges, and<br>independent system<br>operators | Tariff Review and<br>Approval  | Federal Energy<br>Regulatory Commission                  | Federal Code of<br>Regulations, Title 18  |
| U.S. Security Policy<br>Review for Power Line<br>Construction and<br>Operation  | Consultation and<br>Concurrence  | Department of<br>Homeland Security                       | Required by U.S.<br>Security Policy   |
| STATE OF MONTANA  |  |  |   |
| Authorizes storm water<br>discharges to surface<br>waters of the state<br>associated with the<br>construction activities  | General Discharge<br>Permit for Storm<br>Water Associated<br>with Construction<br>Activity | Montana Department<br>of Environmental<br>Quality (MDEQ) | Montana Water Quality<br>Act (75-5-401 et seq.,<br>MCA)                                   |
| Permits construction<br>activities in or near<br>perennial streams on<br>public and private<br>lands  | Montana Joint<br>Application:<br>310 Permit  | Montana Department<br>of Environmental<br>Quality (MDEQ) | Montana Natural<br>Streambed and Land<br>Preservation Act (75-7-<br>101 et seq., MCA)     |
| Authorizes construction<br>and operation of<br>certain transmission<br>lines with a design<br>capacity greater than<br>69kV   | Certificate of<br>Compliance   | Montana Department<br>of Environmental<br>Quality (MDEQ) | Major Facility Siting Act<br>(MFSA) ( 75-20-101 et<br>seq., MCA)                          |

| Action Requiring<br>Permit, Approval or<br>Review   | Permit/Approval   | Accepting<br>Authority/Approving<br>Agency   | Statutory Reference   |
|---|---|--|---|
| STATE OF MONTANA (co  | nt.)  |  |   |
| Allows construction<br>activity within a<br>designated 100 year<br>flood plain  | Montana Joint<br>Application; Flood<br>Plain Development<br>Permit          | Montana Department<br>of Environmental<br>Quality (MDEQ)   | Montana Floodplain<br>and Floodway<br>Management Act (76-<br>5-401 through 406,<br>MCA) |
| Authorizes short-term<br>exemptions from<br>certain surface water<br>quality standards  | Montana Joint<br>Application: 318<br>Permit                                 | Montana Department<br>of Environmental<br>Quality (MDEQ)   | Montana Water Quality<br>Act (75-5-101 MCA)   |
| Permit to excavate<br>10,000 cubic yards or<br>more total aggregate<br>from one or more pits<br>regardless of surface<br>ownership  | Open Cut Permit (if<br>new gravel sources<br>are needed for the<br>project) | Montana Department<br>of Environmental<br>Quality (MDEQ)   | Open Cut Mining Act<br>(84-4-401 et seq., MCA)  |
| Grant of ROW and<br>easements and<br>authorization of<br>construction activities<br>on state trust lands and<br>navigable waterways   | Easement/Land<br>Use License  | Board of Land<br>Commissioners and<br>Montana Department<br>of Natural Resources<br>and Conservation | Title 77, MCA   |
| Grant utility crossing<br>permits for transmission<br>line and access roads<br>that may encroach on<br>state maintained routes  | Utility Crossing<br>Permit  | Montana Department<br>of Transportation<br>(MDOT)  | RW 131 and/or RW 20   |
| Consults with project<br>applicants and state<br>agencies regarding<br>impacts on cultural<br>resources that are listed<br>or eligible for listing on<br>the National Register of<br>Historic Places (NRHP) | State Historic<br>Preservation<br>Compliance                                | State Historic<br>Preservation Act<br>(SHPO)   | Montana Antiquities<br>Act (22-3-421 through<br>442, MCA)                               |
| Facilities Construction   | Building permits per<br>relevant building<br>codes                          | Montana Department<br>of Labor and Industry,<br>Building Codes Bureau                                | Title 50, Chapter 60 and<br>Title 50, Chapter 74,<br>MCA                                |

| Action Requiring<br>Permit, Approval or<br>Review  | Permit/Approval                                 | Accepting<br>Authority/Approving<br>Agency                     | Statutory Reference                     |
|--|---|--|---|
| STATE OF MONTANA (co   | nt.)  |  |   |
| Licensing structure and<br>improvements on State<br>lands and across<br>Navigable water<br>bodies                              | Land Use License<br>(DS-432)                    | Montana Department<br>of Natural Resources<br>and Conservation | Title 77, MCA                           |
| Authorizes construction<br>prior to easement grant<br>by Board of Land<br>Commissioners  | Preconstruction<br>Authorization                | Montana Department<br>of Natural Resources<br>and Conservation | 85-2-402 and 85-2-407<br>MCA            |
| Montana Environmental<br>Policy Act (MEPA)<br>Compliance for MDEQ<br>to grant Certificate of<br>Compliance pursuant<br>to MFSA | Environmental<br>Impact Statement<br>(EIS)      | Montana Department<br>of Environmental<br>Quality              | Title 75, Chapter 1, Part<br>2, MCA     |
| MONTANA LOCAL COUN   | ITY   |  |   |
| Provides containment<br>suppression, and<br>eradication of noxious<br>weeds  | Noxious Weed<br>Management Plan                 | County Weed Control<br>Districts                               | Title 7, MCA                            |
| Issuance of ROW<br>easement grants and<br>road-crossing permits<br>for county property and<br>roadway                          | Easement Grants<br>and Road Crossing<br>Permits | Boards of County<br>Commissioners                              |   |
| Power Line Construction<br>and Operation   | Conditional Use<br>Permit by Powell<br>County   | Powell County Board of<br>Commissioners                        | County Growth Policy                    |
| Power Line Construction<br>and Operation   | Development<br>Permit by Deer<br>Lodge County   | Deer Lodge County<br>Board of Commissioners                    | County Growth Policy                    |
| Power Line Construction<br>and Operation   | Tower Permit by<br>Madison County               | Madison County Board<br>of Commissioners                       | County Growth Policy                    |
| STATE OF IDAHO   |   |  |   |
| Encroachment into<br>State Highway ROW   | ROW Occupancy<br>Permit                         | Idaho Transportation<br>Department (ITD)                       | IC Title 58 Chapter 6                   |
| Crossing on or through<br>State Lands  | ROW Easement                                    | Idaho Department of<br>Lands                                   | IC Title 58 Chapter 6<br>Section 58-603 |

| Action Requiring<br>Permit, Approval or<br>Review | Permit/Approval                 | Accepting<br>Authority/Approving<br>Agency | Statutory Reference                                      |
|---|---------------------------------|--|--|
| STATE OF IDAHO (cont.)                            |                                 |  |  |
| Obstructions to air flight                        | Notice of proposed construction | I ITD, Division of<br>Aeronautics          | IC 21-513 through 21-<br>520 and ITD Rule<br>No.39.04.02 |