

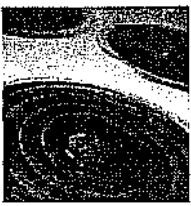
Transmission Safety and Right of Way Information



Safety information and land use restrictions within transmission line rights of way

Human activity near high voltage transmission lines requires the public observe general hazard recognition and safety awareness to ensure safe coexistence with these facilities. Although transmission lines are designed to meet or exceed the appropriate National Electric Safety Code (NESC) clearance distances for the operating voltages and load carrying capacities of the line, certain potential and unavoidable hazards may be present. This document is designed to provide each landowner with some basic safety information and land use restrictions for transmission line rights of way (ROW).





All activity within ten feet of any support structure, anchor cable or structure foundation is prohibited. The safety and reliability of the transmission line begins with the integrity of the structures that support the power carrying conductors. The support structures are never to be climbed or constructed on by the public. This restriction includes the attachment of fencing materials, duck houses or any non-utility equipment to the structure. Because the structure materials are typically chemically treated to prevent decay from moisture and insect infestation, they are not to be handled by non-qualified individuals. The preservative treatments used may cause skin irritation and other related concerns. Periodic herbicide treatments will also be applied to the immediate area around each structure to control the growth of noxious weeds. Human activity on or near structures should also be avoided due to the rare, but ever possible, potential of electrocution during a line-to-structure fault condition.

The landowner is permitted to conduct most everyday activities within the ROW, including in the area directly beneath the conductors. An electromagnetic field is present at locations in close proximity to the line. These electromagnetic fields usually dissipate in intensity very rapidly as distance from the conductor increases—for example, an electric shaving razor or hairdryer typically produces a stronger electromagnetic field for the user than one would be subjected to under a transmission line. Walking or driving under the transmission line is typically considered safe, but extended or long-term activity directly beneath the conductors is not recommended. It is also recommended that large metallic objects such as vehicles not be parked for extended time periods directly under the conductors. The potential for an induced static buildup can result in surprising, but typically non-harmful, static discharges when a person simultaneously contacts the metallic object and the earth.

Standard farming practices are allowed within the ROW, but machinery or equipment that exceeds 14 feet in height should never be raised or operated beneath the conductors. In addition, safety and reliability concerns require that vegetation be strictly controlled near the lines. Therefore, specific planting restrictions are imposed within the ROW. Standard agricultural commodities are permitted to grow, but shelterbelts and windbreaks within the ROW are discouraged and limited to a list of approved, short-growing shrub varieties that will not create a future transmission line hazard. Prescribed burns within the ROW are also prohibited because of the potential for structure damage. In addition, smoke and soot can alter the insulating properties of the air and cause insulator contamination, resulting in hazardous line-to-structure or line-to-line faults. Other than fences to designate property boundaries or to contain livestock, no other building construction is permitted within the transmission line ROW.

Finally, individuals with certain health conditions or medical devices such as heart pacemakers or implanted cardiac defibrillators may be required by their health care providers to restrict their proximity to electromagnetic fields, including high voltage transmission lines. We recommend that individuals with these or any other health issues contact their physicians regarding any specific health-related precautions.



Property damages during construction and maintenance activities

During the construction and maintenance of the transmission line facilities, vehicles, large trucks, machinery and specialized construction equipment will be present on the ROW. These devices, when operated, may result in varying degrees of property damage, including crop destruction and soil compaction. It is the policy of the Project to provide fair and equitable compensation to landowners for any such damages. This policy will remain in place for the duration of the transmission line easement. Upon completion of construction or line maintenance activities, a representative of the Project will contact each impacted landowner to negotiate fair and equitable compensation for any damages.

In the case of crop damages, monetary compensation will be offered based on estimated yield reductions and current commodity prices. In instances of soil compaction, landowners will be offered the choice of either restoration tillage or monetary compensation. Landowners will be similarly compensated for any other damages. For example, a damaged fence will be repaired and restored to original condition, or the owner will have the option of monetary compensation in lieu of restoration work. On non-cropland properties, restoration work will be performed to restore the land to as near original condition as practical.

All construction materials and debris will be salvaged and removed from the ROW. All rubbish will be promptly removed and disposed of as well. Any trees within the ROW will be removed. The landowner will be offered the option of taking possession of the wood or the Project will remove it at the landowner's discretion.

Following is more detailed information on construction, restoration and maintenance procedures. This text is excerpted directly from Section 22 of the South Dakota PUC Route Permit Application.

22.0 Transmission Facility Layout and Construction (ARSD 20:10:22:34)

22.1 Route Clearing

During the acquisition process, individual property owners will be advised as to the construction schedules, needed access to the site and any vegetation clearing required for the facility. To maintain North American Energy Reliability Council (NERC) reliability standards, the ROW will be cleared of the amount of vegetation necessary to construct, operate and maintain the facility. Clear cutting, (i.e. the removal of all trees, brush and other low-growing vegetation), will be used at construction and maintenance access roads and at structure erection sites. Danger trees outside of the ROW will also be removed. Danger trees are those trees that could, in falling, hit the transmission line. Other trees, which are decayed or leaning or may become a potential hazard to the transmission line, will also be removed. Disposal of timber, treetops, limbs and slash will comply with state and local ordinances. Wood from the clearing operation will be offered to the landowner or removed from the site.





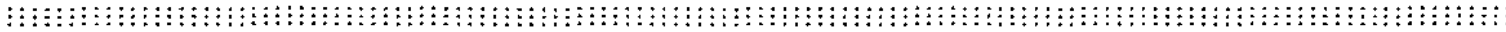
22.2 Transmission Construction Procedures

Once access to the land is granted, site preparation begins in coordination with landowners. This includes clearing the ROW of vegetation that would interfere with the safe operation of the transmission line. Any vegetation that would prevent construction may also be removed. Additionally, underground utilities are identified in cooperation with local utility companies to minimize conflicts to the existing utilities along the routes. All materials resulting from the clearing operations will either be chipped on site or stacked in the ROW with landowner agreement for their use. If temporary removal or relocation of fences is necessary, installation of temporary or permanent gates would be coordinated with the landowner. The ROW agent also works with the landowners for early harvest of crops where possible. During the construction process, the Applicants may ask the property owner to remove or relocate equipment and livestock from the ROW.

Transmission line structures are generally designed for installation at existing grades. Therefore, structure sites will not be graded or leveled, unless it is necessary to provide a reasonably level area for construction access and activities. For example, minor grading might be performed where the immediate terrain near the structure is such that vehicle or installation equipment could not safely access or perform construction operations properly.

The Applicants have standard construction and mitigation practices that were developed from experience with past practices as well as industry specific Best Management Practices (BMPs). These BMPs address ROW clearance, erecting transmission line structures and stringing transmission lines. BMPs for each specific project are based on the proposed schedules for activities, prohibitions, maintenance guidelines, inspection procedures and other practices. In some cases these activities, such as schedules, are modified to incorporate BMP construction that will assist in minimizing impacts for sensitive environments. Contractors are advised of these BMP requirements during the bid process. For facilities that will have the structures directly embedded in the ground, the structures will be erected by auguring or excavating a hole typically 10 to 15 feet deep and 3 to 4 feet in diameter for each pole. Any excess soil from the excavation will be offered to the landowner or removed from the site.

The steel or wood structures will then be set and the holes back-filled with the excavated material or with native soil or crushed rock. In poor soil conditions, a galvanized steel culvert is sometimes installed vertically with the structure set inside. Other facilities may require the use of concrete foundations. The size of the hole for concrete foundations depends largely on soil type. Based on the known soil types in eastern South Dakota, it is anticipated that the average structure depth would be approximately 12 feet deep. Drilled pier foundations may vary from 4 to 8 feet in diameter. Concrete trucks are normally used to bring the concrete in from a local concrete batch plant.



Steel structures are delivered to staging areas, which are located approximately every 25 miles along the route and occupy approximately one acre of land. At the staging area, steel structure sections are connected, the arms are attached, and the structure is then loaded onto a structure trailer. The structure is delivered to the staked location and placed within the ROW until the structure is set. Insulators and other hardware are attached while the steel structure is on the ground. The structure is then lifted and placed in the ground for direct buried structures. Structures that cannot be directly buried are secured on the foundation by crane. In some cases, temporary lay down areas may be required. These areas will be selected based on their location, access, security and ability to efficiently and safely warehouse supplies. The areas are chosen so minimal excavation and grading is needed. The temporary lay down areas that are outside of the transmission line ROW will be obtained from affected landowners through rental agreements.

Wood structures are also delivered to a staging area. When the transmission line runs parallel with a roadway, wood structures may be placed at the staked location. This occurs when there is room to leave the structure and adequate access to drop off the structure until it is installed. When wood structures are located away from roadways, they are sorted at the staging area and loaded onto structure trailers for delivery to the staked location. Because the wood structures weigh less, several wood structures can be placed on the trailer for each delivery. Insulators and other hardware are attached to the structure while it is on the ground, then a line truck lifts and places it.

After structures have been erected, conductors are installed by establishing stringing setup areas within the ROW. These stringing setup areas are usually located every two miles along a project route and usually occupy approximately 15,000 square feet of land. Conductor stringing operations also require brief access to each structure to secure the conductor wire to the insulators or to install shield wire clamps once final sag is established. Temporary guard or clearance structures are installed as needed over existing distribution or communication lines, streets, roads, highways, railways or other obstructions, after any necessary notifications are made or permits obtained. This ensures that conductors will not obstruct traffic or contact existing energized conductors or other cables. In addition, the conductors are protected from damage. During construction, the most effective means to minimize impact to water areas will be to span all streams and rivers with structures. In addition, the Applicants will not allow construction equipment to be driven across waterways, except under special circumstances and after discussion with the appropriate resource agency. Where waterways must be crossed to pull in the new conductors and shield wires, workers may walk across, use boats, or drive equipment across ice in the winter. In areas where construction occurs close to waterways, BMPs help prevent soil erosion and ensure that equipment fueling and lubricating occur at a distance from waterways.



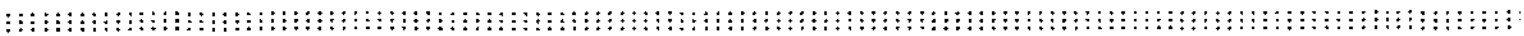


22.3 Substation Construction Procedures

Once the final design is complete and necessary property is acquired, construction will begin. A detailed construction schedule will be developed based upon availability of crews, outage restrictions for any transmission lines that may be affected, weather conditions, spring load restrictions on roads and any restrictions placed on certain areas for minimizing permanent impact from construction. Substation upgrades involve replacing existing equipment with new equipment. All construction work occurs within the existing substation property unless expansion of the site is necessary. Construction of a new facility begins with site preparation work, which involves grading and leveling the site with heavy equipment to support electrical equipment and the control house. This may or may not include replacement of site soils, depending on existing soil conditions found and those identified in the Soil Exploration Report. Topsoil will be removed, stockpiled and re-spread onsite. Any excess soil will be offered to the landowner or removed from the site. Once the site is graded, a perimeter fence, typically chain link, is installed to secure the site. All substation equipment will be contained within the fenced area. Concrete foundations are then placed throughout the substation pad to support the substation equipment. A control house is constructed to house the protective relaying and control equipment. Erection of steel structures follows the foundation installation. These structures are built using rolled I-beams and/or tubular steel materials. Beams are used for mounting electrical conductors, disconnects and equipment. Bare copper conductor is buried around the perimeter of the fence and within the fence to properly ground all of the equipment and provide safety of personnel. Large high-voltage equipment, such as circuit breakers and transformers with associated control cables, are installed following completion of these steel structures. The final step is to properly test and commission each electrical device.

The Applicants will provide erosion control methods to be implemented to minimize runoff during substation construction and since the projects will likely impact more than one acre, a National Pollutant Discharge Elimination System (NPDES) permit will be acquired, as necessary. Additionally, a Storm Water Pollution Prevention Plan (SWPPP) will be implemented in compliance with the NPDES, and if necessary, a Spill Prevention, Control, and Countermeasure (SPCC) plan will be developed or updated, as applicable.

Contractors will be committed to safe working practices, maintaining property and equipment in safe working condition and requiring compliance with all applicable safety rules, practices and procedures. Substations will be designed in compliance with the applicable requirements of Rural Utilities Service (RUS), National Electrical Safety Code (NESC), Occupational Safety and Health (OSH) Act (29 CFR 1910) and local regulations. Substations will be reviewed for local conditions, and will include provisions in design beyond the minimum provisions for safety established in the various regulatory codes, where warranted. Substation designs will allow future maintenance to be accomplished with a minimum impact on substation operation and allow adequate clearance to work safely.



22.4 Restoration Procedures

During construction, limited ground disturbance at the structure sites may occur. The construction contractor establishes a main staging area for secure, temporary storage of materials and equipment. Typically, a previously disturbed or developed area is used. Such an area includes sufficient space to lay down material and pre-assemble some structure components or hardware. Other staging areas located along the ROW are limited to the structure site areas for structure lay down and framing, prior to structure installation. Additionally, stringing setup areas are used to store conductors, stringing equipment and other stringing equipment necessary for stringing operations. Disturbed areas are restored to their original condition to the maximum extent practicable, or as negotiated with the landowner.

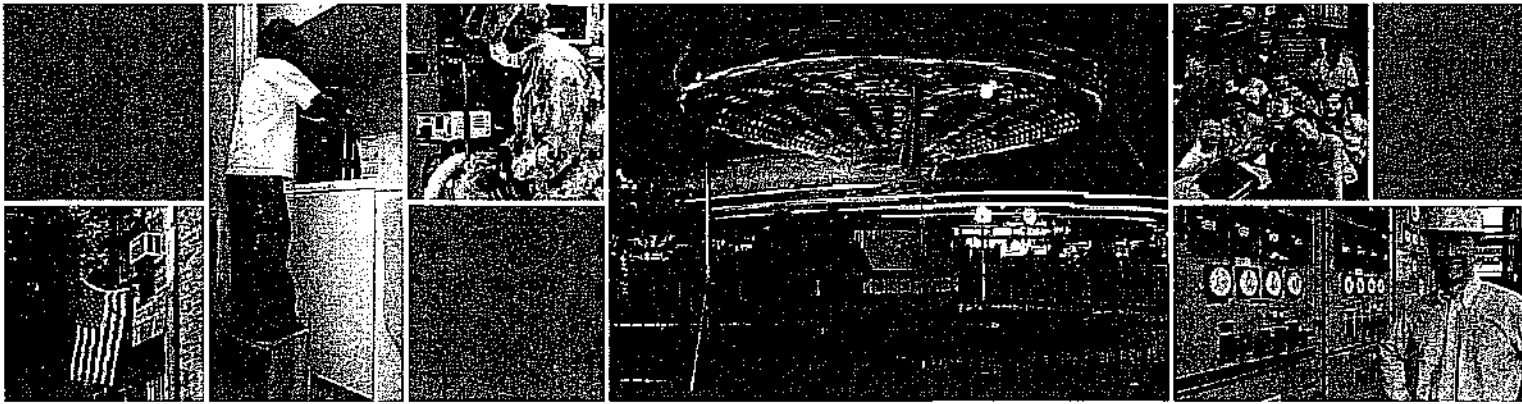
Unless otherwise agreed upon by the landowner, all storage and construction buildings, including concrete footings and slabs and all construction materials and debris, will be removed from the site once construction is complete. Post-construction reclamation activities also include the removing and disposing of debris; dismantling all temporary facilities (including staging areas); employing appropriate erosion control measures, and reseeding areas disturbed by construction activities with vegetation similar to that which was removed.

Once construction is completed, landowners are contacted by the ROW agent to determine if the clean-up measures have been completed to their satisfaction and if any other damage may have occurred. If damage has occurred to crops, fences or the property, the Applicants will compensate the landowner. In some cases, an outside contractor may be hired to restore the damaged property as near as possible to its original condition.

22.5 Maintenance Procedures

Access to the ROW of a completed transmission line is required periodically to perform inspections, conduct maintenance and repair damage. Regular maintenance and inspections will be performed during the life of the facility to ensure its continued integrity. Generally, the Applicants will inspect the transmission lines at least once per year. Inspections will be limited to the ROW and areas where obstructions or terrain may require off-ROW access. If problems are found during inspection, repairs will be performed and the landowner will be compensated for any loss.

The ROW will be managed to remove vegetation that interferes with the operation and maintenance of the transmission line. Native shrubs that will not interfere with the safe operation of the transmission line will be allowed to reestablish in the ROW. The Applicants' practice provides for the inspection of major transmission lines (230 kV and above) annually to determine if clearing is required. ROW clearing practices include a combination of mechanical and hand clearing, along with herbicide application where allowed, to remove or control vegetation growth. Noxious weed control with herbicides will be conducted on a two-year cycle around structures and anchors.



For more information, contact:

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November 2007

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA**

IN THE MATTER OF THE APPLICATION BY)	DECISION AND ORDER
OTTER TAIL POWER COMPANY ON BEHALF)	APPROVING STIPULATION
OF SEVEN REGIONAL UTILITIES FOR A)	AND GRANTING PERMIT TO
PERMIT TO CONSTRUCT 5.45 MILES OF 230)	CONSTRUCT
KV TRANSMISSION LINE, 33 MILES OF 345)	TRANSMISSION FACILITIES
KV TRANSMISSION LINE, THE BIG STONE)	
345 KV SUBSTATION AND MODIFICATION OF)	EL06-002
THE BIG STONE 230 KV SUBSTATION)	

On January 17, 2006, Otter Tail Power Company, on behalf of seven regional utilities (Applicants)- Otter Tail Power Company, Central Minnesota Municipal Power Agency, Great River Energy, Heartland Consumers Power District, Montana-Dakota Utilities Co., Southern Minnesota Municipal Power Agency, and Western Minnesota Municipal Power Agency (as represented by Missouri River Energy Services) filed an application for a permit to construct transmission lines and associated facilities in Grant and Deuel Counties in South Dakota. The applicants seek a Construction Permit designating a route and authorizing construction of three new transmission lines in South Dakota. Two lines would be constructed to 230 kV standards and would run from the Big Stone 230 kV Substation to a new Big Stone 345 kV Substation, with one 230 kV line continuing on to the Morris Substation near Morris, Minnesota, a distance of approximately 48 miles. Approximately 5.45 miles of new 230 kV line would be built in South Dakota. The third line would be constructed for future 345 kV operation but initially be operated at 230 kV and would run from the new Big Stone 345 kV Substation to the Granite Falls Substation in Granite Falls, Minnesota, a distance of approximately 90 miles, 33 miles of which are in South Dakota. In addition, modification of the existing Big Stone 230 kV Substation and existing transmission facilities and construction of a new Big Stone 345 kV Substation will also be required as part of the project.

On January 19, 2006, the Commission electronically transmitted notice of the filing to interested individuals and entities. Applications for Party Status were due by March 20, 2006. On March 13, 2006, the Commission received an Application for Party Status from the City of Gary. By order dated April 25, 2006, the Commission granted party status to the City of Gary. A public input hearing was held as scheduled on March 2, 2006, in Reville, South Dakota. On December 20, 2006, the Commission received a Stipulation entered into by the Applicants, the City of Gary and Commission Staff. The Stipulation set forth Findings of Fact, Conclusions of Law, and Terms and Conditions.

At its January 2, 2007, meeting, the Commission considered this matter. The Commission has jurisdiction over this matter pursuant to SDCL Chapter 49-41B, specifically 49-41B-1, 49-41B-2, 49-41B-2.1, 49-41B-4, 49-41B-11, 49-41B-12, 49-41B-13, 49-41B-15, 49-41B-16, 49-41B-17, 49-41B-17.1, 49-41B-21, 49-41B-22, 49-41B-25, 49-41B-26, 49-41B-33, 49-41B-38, and ARSD Chapter 20:10:22. The Commission voted to approve the Stipulation and accept the Findings of Fact, Conclusions of Law, and Terms and Conditions. By approving the Stipulation, the Commission grants Applicants' application for a permit to construct transmission facilities, subject to the Findings of Fact, Conclusions of Law, and Terms and Conditions listed in the Stipulation.

It is therefore

ORDERED, that the Stipulation entered into by the Applicants, the City of Gary, and Commission Staff on December 20, 2006, shall be approved and shall be incorporated by reference into this Decision and Order the same as if it had been set forth in its entirety herein; and it is

FURTHER ORDERED, that Applicants are granted a permit to construct the transmission facilities, subject to the Findings of Fact, Conclusions of Law, and Terms and Conditions listed in the Stipulation.

Dated at Pierre, South Dakota, this 16th day of January, 2007.

CERTIFICATE OF SERVICE
The Undersigned hereby certifies that this document has been served today upon all parties of record in this docket, as listed on the docket service list, by facsimile or by first class mail, in properly addressed envelopes, with charges prepaid thereon.
By: <u>Neilson Kolbo</u>
Date: <u>1/17/07</u>
(OFFICIAL SEAL)

BY ORDER OF THE COMMISSION:

Dustin M. Johnson
DUSTIN M. JOHNSON, Chairman

Gary Hanson
GARY HANSON, Commissioner

Steve Kolbeck
STEVE KOLBECK, Commissioner