# 9. CONSTRUCTION PRACTICES AND OPERATION OF THE HVTL AND ASSOCIATED SUBSTATIONS

## 9.1 Construction Practices

### 9.1.1 Transmission Line Construction Practices

The proposed 115 kV transmission line would be constructed at existing grade elevations. Therefore, pole locations would generally not require grading, unless it is necessary to provide a level area for construction access and activities.

MP and GRE design and construct transmission lines using the most cost-effective methods, based on past experiences and practices and in compliance with the latest industry standards. MP and GRE typically utilize outside contractors for construction activities on large transmission projects. The specifications used are developed by MP and GRE's Engineering Services Departments. GRE utilizes RUS contract documents and standards for transmission lines. A copy of the Project's easement restriction list, construction permit conditions, and any required local permits are given to the awarded contractor prior to construction.

Typical tangent (in-line) structures will be solid wood. Laminated wood, steel direct-embedded or steel poles with concrete foundations would be used in certain locations (such as the station termination sites). Each structure will require a 10 to 15 feet deep hole that is 3 to 4 feet in diameter. Excavated soil will be leveled at the pole site. The poles may be backfilled with native soils, crushed rock or concrete depending on design conditions. In lowland areas, a galvanized steel culvert may be also inserted for pole stability if soil capacity is poor. Large angle structures will typically be three-pole guyed wood structures or self-supporting steel poles that will require a concrete foundation. The concrete pier foundations will typically have diameters of 4 to 8 feet. The hole may require a typical depth of 15 to 30 feet depending on design requirements. The piers will be filled with concrete delivered to the site via trucks from a local batch plant.

Poles may be delivered directly to the installation location or to a designated marshalling storage yard, depending on delivery and contractor availability. If the poles are delivered to an installation site, they are placed on the right-of-way out of the clear zone of any adjacent highways or designed pathways. The poles are typically framed with insulators and hardware on the ground and then lifted and placed in the hole via a bucket truck or a crane, depending on the weight of the structure.

Once the structures have been erected, conductors are installed by establishing stringing setup areas within the right-of-way. These stringing setup areas are typically located every two miles along the right-of-way. The conductors are pulled with a rope lead that connects to every structure through a dolly attached at the insulator location. After any necessary notifications are made or permit

requirements met to mitigate any concerns with traffic flow or operations of other utilities, temporary guard or clearance poles are installed at crossings to provide adequate clearance over other utilities, streets, roads, highways, railroads, or other obstructions.
In lowland areas, construction activities generally occur during the winter season to minimize damage to wetland areas, facilitate construction, and/or to comply with required wetland crossing permits. A pre-construction conference will outline any special requirements for the contractor prior to the start of any construction activities.

During construction when temporary removal or relocation of fences may occur, installation of temporary or permanent gates may be required. The Applicants land rights agents would coordinate with affected landowners regarding replacement of fences and gates. The contractor would work around cultivated areas until harvest has occurred.

As a RUS borrower, GRE adheres to RUS standards regarding clearances to ground, clearance to crossing utilities, clearance to buildings, right-of-way widths, erecting power poles, and stringing of transmission line conductors. RUS requires borrowers to submit an environmental report prior to any construction activities.

### 9.1.2 Tower Substation

Construction of the new substation will begin once the property is acquired, the final design is complete and the materials are received. 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 impacts from construction.

Approximately one acre of land (200' x 200' fenced area plus adjacent construction area and parking) will be graded to construct the substation. The concrete foundations will be poured to support the substation equipment and control house. Once the site is graded, a perimeter fence will be installed to secure the site and substation erection will commence.

MP provides erosion control methods to be implemented to minimize runoff during substation construction. An MP contractor will comply with local, state, NESC and MP standards regarding clearance to ground, clearance to crossing utilities, clearance to buildings, erection of power poles, and stringing of transmission line conductors to the substation.

Upon completion of construction activities, MP would restore the site. Post-construction reclamation activities 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. Where appropriate, MP will incorporate methods to screen the final site.

MP will perform periodic inspections, maintain equipment, and make repairs over the life of the substation. MP would also conduct routine maintenance as required to remove undesired vegetation that may interfere with the safe and reliable operation of the substation.

#### 9.1.3 Embarrass Switching Station

The design, construction and restoration practices defined above for the Tower Substation would also be employed for the Embarrass Switching Station. All construction will be completed in accordance with MP construction standards as well as the NESC. These standards include clearances to ground, clearance to crossing utilities, clearance to buildings, erecting power poles, and stringing of transmission line conductors to the switching station.

Approximately one acre would be graded for construction of the switching station. The dimensions of the station are planned to be 180' x 180', located adjacent to the existing cleared right-of-way for 115 kV Line #34 and #34 Tap.

### 9.2 Operation and Maintenance

MP and GRE will periodically use their respective transmission line right-of-way crews to perform inspections, maintain equipment, and repair damage. Regular maintenance and inspections will be performed over the life of the facility to ensure a reliable system. Periodic inspections will be done by foot, snowmobile, All-Terrain Vehicles, pickup truck, or by aerial means. These inspections will be limited to the acquired right-of-way and areas where obstructions or terrain require access off the easement.

MP and GRE will conduct vegetation surveys and remove undesired vegetation that will interfere with the operation of the transmission line. Frequency of vegetation maintenance is on a two to five year cycle. Right-of-way clearing practices include a combination of mechanical and hand clearing, along with an application of herbicides where allowed.

### 9.3 Work Force Requirements

During construction, there will be minimal impacts to community services, hotels and restaurants to support the utility personnel and contractors. It is estimated that 15 to 20 workers will be employed during construction of the Project.

It is not expected that additional permanent jobs would be created by this Project. The construction activities would provide seasonal influx of additional revenue

into the communities during the construction phase, and materials such as concrete may be purchased locally.