9.0 Electric Powerlines

Electrical service requirements for the proposed project include utilizing existing service lines and constructing electrical powerlines to pump stations, meter stations, remote valves, and pigging facilities. Because local electrical power providers, not Overland Pass, would be constructing and operating the electrical powerlines, the local electrical power companies would be responsible for obtaining any necessary approvals or authorizations from federal, state, and local governments. While the permitting process for the electrical facilities is an independent process from the pipeline ROW approval process, the construction and operation of these powerlines are considered connected actions under NEPA and, therefore, are evaluated within this EIS for the Proposed Action.

9.1 Electrical Powerline Requirements

Powerline requirements would vary depending on the project facility (i.e., pump stations, meter stations, remote valves, and pigging facilities) (**Table 9.1-1**). New electrical transmission powerlines would be constructed at 17 locations throughout most of the pipeline route from RP 0 to RP 749.4. New powerline connections would provide power for two pump stations, Echo Springs (RP 146.5) and Laramie (RP 271.7) each with a voltage of 34.5 kV. The length of these connections would be greater than 0.25 and 2.9 miles, respectively. Voltages for powerlines to the Unnamed (RP 448), WaKeeney, Bushton, and Conway meter stations would range from 12.5 kV to 13.2 kV. Lengths for these connections would range from greater than 0.25 to 2.4 miles (**Table 9.1-1**). If the WaKeeney Pump Stations were constructed in the future, it is likely that the electrical power would be supplied from the service delivered to the WaKeeney Meter Station; thus, the impacts for the future station are included in the analysis. Other electric power requirements for remote valves and pigging facilities would be supplied from distribution service drops from adjacent distribution powerlines (i.e., powerline with voltage ranging between 12.5 kV to 15 kV). Each of these distribution service drops would require the installation of approximately one or two poles and a transformer. The length of these distribution service drops typically would be less than 200 feet. Utilities would restore the work area as required on completion of the new service drop in accordance with local standards.

Table 9.1-1 details the land requirements for the new electrical powerlines associated with the pump stations for the Proposed Action. Preliminary routing has been identified for each powerline. These routes are subject to change as the pumping station supply requirements are further reviewed by the local utilities providing electrical service. Powerlines would be located entirely on private land.

9.2 Electrical Powerline Construction

The construction phases for each electrical powerline would consist of ROW acquisition, ROW clearing, construction, and site restoration and cleanup. The following is a brief summary of the typical steps associated with powerline construction. Actual powerline construction procedures would be developed by each utility to address site-specific conditions.

- ROW Easements. The electric utilities would obtain any necessary easements and ROW grants. It is estimated that the construction ROW width would be 50 feet, with a 25-foot permanent ROW width.
- ROW Clearing. Limited clearing would be required along existing roads in native and disturbed grasslands and croplands. Some trees may require removal to provide adequate clearance between the conductors and underlying vegetation. Trimming to avoid tree removal may be employed in some locations.

Table 9-1 Electrical Powerline Requirements for the Proposed Action

Facility	Reference Point (RP)	Power Required	Utility Company	Length of Connection	Direction of Incoming Connection	Line Voltage
Remote Valve #1	0.0	480 V, 5 hp, 50 amp Service	Power to be provided by Williams at the Opal Plant	<0.25 mile	Power to be run underground	480 V
Remote Valve #8	72.1	480 V, 5 hp, 50 amp Service	Pacific Power and Light (Rocky Mountain Power)	100 feet	Too close to be determined	12,240 V
Remote Valve #17 (Echo Springs Pump Station)	146.5	480 V, 5 hp, 50 amp Service (5 MVA for entire station)	Power to be provided by Williams at the Echo Springs Plant	<0.25 mile	Power to be run underground	34.5 kV
Remote Valve #23	207.0	480 V, 5 hp, 50 amp Service	Carbon Power and Light	2.9 miles	From the SouthWest	13.2 kV
Remote Valve #30 (Laramie Pump Station)	271.7	480 V, 5 hp, 50 amp Service (5 MVA for entire station)	Laramie Pump Station, power to be provided by Carbon Power and Light as part of the entire station	2.4 miles	From the North	34.5 kV
Remote Valve #34	307.4	480 V, 5 hp, 50 amp Service	High West Energy	0.2 mile	From the North	12,470 V
Remote Valve #35	323.0	480 V, 5 hp, 50 amp Service	Poudre Valley REA	Powerline crosses valve site	Too close to be determined	15 kV
Remote Valve #37	342.7	480 V, 5 hp, 50 amp Service	High West Energy	<1 mile (within 1/2)	From the East	12,470 V
Remote Valve #42	389.8	480 V, 5 hp, 50 amp Service	Xcel Energy	1 to 1.5 miles	From the West	13.2 kV
Remote Valve #47/Meter Station	447.8	480 V, 5 hp, 50 amp Service	YW Electric	1 to 1.5 miles	From the West	12,470 V
Remote Valve #52	507.9	480 V, 5 hp, 50 amp Service	Prairieland Electric	1 to 1.5 miles	From the SouthEast	13.2 kV
Remote Valve #56/Scraper Trap	552.9	480 V, 5 hp, 50 amp Service	Midwest Energy	<0.5 mile (within 1/4)	Too close to be determined	13.2 kV
Remote Valve #61/Meter Station	606.0	480 V, 5 hp, 50 amp Service	Western COOP	0.5 mile	From the East	13.2 kV
Remote Valve #66/Scraper Trap	654.7	480 V, 5 hp, 50 amp Service	Western COOP	<0.5 mile (within 1/4)	Too close to be determined	13.2 kV
Remote Valve #72/Meter Station	718.0	480 V, 5 hp, 50 amp Service	Power to be provided by ONEOK at the Bushton Plant	<0.25 mile	Power to be run underground	480 V
Remote Valve #74	736.0	480 V, 5 hp, 50 amp Service	Power to be provided by Williams at the Mitchell Plant	0.1 mile	Power to be run underground	480 V
Remote Valve #75/Meter Station	749.4	480 V, 5 hp, 50 amp Service	Power to be provided by Williams at the Conway Plant	0.1 mile	Power to be run underground	480 V

9.2.1 Powerline Construction

The structures would be delivered on flatbed trucks. A mobile crane or picker truck would be needed to install the poles. Holes for footings would be excavated for structure placement, typically with radial arm diggers. The wooden or steel poles would be directly embedded into the ground and anchors may be required at angles and dead ends. The height of each structure would be an average of 30 feet. Pole spacing typically would be approximately 300 feet. Conductors (wires) would be attached to the structure using porcelain or fiberglass insulators. Alternating current electrical transmission powerlines require four or five sets of wires, one set for each electrical phase and one or two sets for overhead shield wires. Pulling or reeling areas would be needed for installation of the conductor wires. Each pulling or reeling area would be less than 0.25 acre in size and spaced at approximately 300-foot intervals.

Overland Pass has recommended that local service providers adhere to design concepts to prevent collision and electrocution hazards for foraging and migrating raptors, including:

1. On single-phase structures, a minimum vertical separation of 36 inches from phase to the ground would be used to accommodate eagles and most wading birds;

2. On three-phase structures, a vertical clearance of at least 43 inches between uninsulated conductors, ground wires, and grounded hardware on poles with 8-foot crossarms, would provide the required 60-inch clearance;

3. Corner poles may be constructed in a conventional manner, if jumper wires were insulated and center phase non-conducting extension links were used;

4. If conductor separation could not be achieved and covering or reframing was impractical, perch guards (triangles) with optional perches may be used for protection of large perching birds;

5. Where adequate separation of conductors, or conductors and grounded parts, could not be achieved, covering conductors may be the only solution short of reframing or replacing structures; and

6. If transformers, cutouts or other energized or grounded equipment were present on the structure, jumpers, cutouts, and bushings should be covered to decrease the chance of bird electrocution.

9.2.2 Restoration

After the powerline structures are in place and the conductors are strung between the structures, the disturbed areas would be restored. The soil in the disturbed areas would be reshaped and contoured to its original condition. Reseeding would follow landowner requirements. All litter and other remaining materials would be removed from the construction areas and properly disposed.

9.3 Affected Environment and Environmental Consequences

This section addresses the natural and human resources potentially affected by the construction, operation, and maintenance of the proposed electrical powerlines associated with the Proposed Action. Impacts associated with the electrical service drops are expected to be minimal and comparable to those associated with supplying electricity to the average home or farm.

As proposed, the powerline routes cross streams, wetlands, and riparian areas that are likely to attract raptors and migratory birds. The new electrical powerline segments would incrementally increase the collision potential for migrating and foraging bird species (e.g., raptors and migratory birds [APLIC 1994]). However, collision potential typically is dependent on variables such as the line location in relation to high use habitat areas (e.g., nesting, foraging, and roosting), line orientation to flight patterns and movement corridors, species composition, visibility, and line design. In addition, distribution lines that are less than 69 kV but greater than

1 kV pose an electrocution hazard for raptor species attempting to perch on the structure. Configurations less than 1 kV or greater than 69 kV typically do not present an electrocution potential, based on conductor placement and orientation (APLIC 1996).

Potential collision and electrocution impacts to bird species from the Proposed Action could be reduced further if electrical service providers agree to implement the mitigation measures proposed in Overland Pass' Suggested Guidelines for Raptor Protection on Power Lines (Overland Pass 2006).

9.4 Cumulative Impacts

While the construction of the powerlines would overlap in space and time with other projects, the amount of surface disturbance caused by powerline construction would be negligible compared to other development projects discussed in Chapter 5.0. The total disturbance caused by the construction and operation of the powerlines would be minor and dispersed across hundreds of miles.