

## **SECTION 4.0 - PROJECT CONSTRUCTION**

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This section discusses the construction of the proposed projects. Topics include a brief overview of the construction activities, the construction workforce, environmental and safety training, and the process that will be followed to address any variances or deviations that may be required during construction.

### **4.1 CONSTRUCTION ACTIVITIES**

Construction of the transmission line will include the following sequence of activities:

- Surveying the transmission centerline, other project features, and work areas
- Upgrading or construction of temporary and permanent access roads
- Clearing and grading activities for the right-of-way, tower sites, staging areas, and batch plants
- Excavating and installing foundations
- Assembling and erecting towers with temporary and permanent pad sites
  - Conventional method of assembly and erection
  - Helicopter method of assembly and erection
- Stringing conductors and ground wires
- Installing counterpoise (tower grounds) where needed
- Cleanup and reclamation of affected areas

These activities are described in detail in Appendix A1 – Construction Plan and Program, which also includes information regarding other construction components including:

- Construction storage yards and concrete batch plants
- Equipment staging areas
- Equipment refueling areas
- Helicopter use and refueling
- Construction in military operating areas

Additionally, Appendix A – Construction Considerations includes detailed information related to the construction of the projects including:

- Transportation management
- Blasting
- Flagging, fencing, and signage
- Erosion/dust control and air quality
- Fire protection
- Hazardous materials management
- emergency preparedness and response

## 4.2 CONSTRUCTION WORKFORCE

The estimated number of workers and types of equipment required to construct the proposed transmission line is shown in Table 4-1, and substation construction is presented in Table 4-2. Table 4-1 represents the estimated workforce required for the SWIP – Southern Portion, and would also be applicable to the SWIP-Central Portion if it was constructed during the same mobilization. If a separate mobilization was performed for only the SWIP – Central Portion, the number of crews and the equipment required for assembly may be reduced. Estimated workforce and equipment requirements associated with substation construction for the SWIP – Southern Portion are shown in Table 4-2.

<b>TABLE 4-1 500KV TRANSMISSION LINE CONSTRUCTION ESTIMATED PERSONNEL AND EQUIPMENT</b>			
<b>Activity</b>	<b>People</b>	<b>Quantity and Type of Equipment</b>	
Survey Crew	4	2	pickup trucks
Road Construction Crew	4-8	1	bulldozer (D-8 Cat or equivalent)
		2	motor graders
		2	pickup trucks
		3	water trucks (for construction and maintenance)
Footing Installation Crew	28	6	hole diggers
		2	bulldozers
		3	trucks
		6	concrete trucks
		2	dump trucks
		6	pickup trucks
		1	carry all
		2	hydraulic cranes
		1	wagon drill
Structure Steel Haul Crew	6	4	steel haul trucks
		2	pickup trucks
		3	yard and field cranes
		3	fork lifts
Structure Assembly Crews 4-6 Crews	40	4	pickup trucks
		6	carry alls
		4	cranes (rubber tired)
		3	trucks (2 ton)
Structure Erection Crews 1-2 Crews	14	2	cranes (120 - 300 ton)
		1	2 ton truck
		2	pickup trucks
		2	carry alls
Wire Installation Crew	36	6	wire reel trailers
		6	diesel tractors
		4	cranes (2) 20 ton, (2 ) 30 ton
		4	trucks (5 ton)
		4	pickup trucks
		2	splicing trucks
		4	3-drum pullers (2 medium, 2 heavy)
		1	single drum puller (large)
		2	double bull-wheel tensioner (1 light and 1 heavy)
		2	sagging equipment (D-8 Cat)
		6	carry alls
2	static wire reel trailers		

<b>TABLE 4-1 500KV TRANSMISSION LINE CONSTRUCTION ESTIMATED PERSONNEL AND EQUIPMENT</b>			
<b>Activity</b>	<b>People</b>	<b>Quantity and Type of Equipment</b>	
Clean-Up Crew	4	3	trucks
		1	pickup trucks
		1	(D-6 Cat)
Road Rehabilitation Crew (Right-of-Way Restoration)	4	1	bulldozer
		1	motor grader
		2	pickup trucks
Estimated personnel required for all tasks including maintenance, management, and quality control personnel = 250			

<b>TABLE 4-2 500kV SUBSTATION CONSTRUCTION ESTIMATED PERSONNEL AND EQUIPMENT</b>			
<b>Activity</b>	<b>People</b>	<b>Quantity and Type of Equipment</b>	
Survey Crew	4	2	pickup trucks
Site Management Crew	10-12	4	office trailers
		4	pickups
		4	all-terrain vehicles
		4	generators
		4	scrapers
Site Development-Civil Work Crew	30-35	2	dozers (ripper)
		2	motor graders
		2	roller compactors
		2	excavators
		4	dump trucks
		3	water trucks
		1	mechanics truck
		1	fuel truck
		2	pickup trucks
		6	carry alls
		1	pickup truck
Fence Installation Crew	8-10	1	boom truck
		2	carry alls
		1	backhoe
		1	concrete truck
		1	reel stand truck
		2	bobcats
		2	hole diggers
Equipment Footings Installation Crew	24-30	2	boom trucks
		1	excavator
		3	concrete trucks
		1	dump truck
		1	roller compactor
		2	plate compactors
		1	backhoe
		2	bobcats
		1	mechanic's truck
		1	fuel truck
		1	water truck
		2	pickup trucks
		4	carry alls
		2	all-terrain vehicles

**TABLE 4-2  
500kV SUBSTATION CONSTRUCTION  
ESTIMATED PERSONNEL AND EQUIPMENT**

Activity	People	Quantity and Type of Equipment	
Cable Trench, Conduits, and Station Grounding	12-16	2	trenchers
		2	dozers (ripper)
		2	roller compactors
		2	plate compactors
		2	excavators
		1	boom trucks
		3	pickup trucks
		2	flatbed trucks
		4	carry alls
		1	air compressor
		1	backhoe
		1	mechanic's truck
		1	fuel truck
		1	dump truck
Steel Structure and Bus Installation Crew	16-20	1	reel stand truck
		2	crane, RT
		4	boom trucks
		6	manlifts
Control Building and Wiring Crew	20-24	4	welder trucks
		2	boom trucks
		4	manlifts
		3	wire pullers-small
		2	reel stand trucks/trailers
		4	vans
		4	pickup trucks
		2	carry alls
		1	splicing van
		2	concrete trucks
		1	bobcat
1	trencher		
2	plat compactors		

Various phases of construction will occur at different locations throughout the construction process and in some cases at the same time at different locations. Regular field meetings will be held with the CIC and environmental monitors to coordinate construction activities with monitoring requirements for both the transmission line and substation.

**4.3 ENVIRONMENTAL AND SAFETY TRAINING**

Prior to gaining access to the right-of-way, all construction and maintenance workers will be required to participate in an environmental education program. This program will be developed by the Project Proponent prior to the start of construction and will be submitted to the BLM for review and approval prior to implementation. At a minimum, the program will include the following topics: biological, cultural, paleontological, and other environmental requirements and protection measures. After completion of construction, the operator of the transmission line and substations will provide environmental education to all maintenance and operation personnel who will be accessing the right-of-way.

After participating in the training program each trained worker will receive a card and hardhat sticker, indicating they are cleared for access to the right-of-way. The Construction Contractor will provide the CIC with an updated list of those workers who have received the training. The Construction Contractor will be responsible for ensuring that all construction personnel have received the required training. A non-compliance violation will be issued if a worker is found working on the right-of-way without the required training.

In addition, the Construction Contractor will be responsible for providing safety training, as required. Specific health and safety information for this COM Plan is contained within Appendix A, including a description of the safety requirements specifically associated with construction activities (construction of access roads, blasting, fire protection, etc.) All construction, operation, and maintenance activities will be required to comply with Occupational Safety and Health Administration regulations. The CIC will be notified by the Construction Contractor of any accidents that occur on public land during construction of the projects. Notification procedures for emergencies are described in Appendix A8 – The Emergency Preparedness and Response Plan Guidelines.

#### **4.4 DEVIATIONS DURING CONSTRUCTION**

Changes or deviations are likely to be needed for the approved projects in order to accommodate or mitigate on-site circumstances. In order to avoid delays in the construction schedule, the following process has been developed for the review and approval/denial of proposed changes that may be required after construction has commenced.

##### **4.4.1 Deviation Review Process**

When a desired deviation is identified by the Construction Contractor, a request will be submitted to the CIC in writing. The Construction Contractor will provide a brief description of the deviation, the need for it, and a copy of the COM Plan map sheet showing the location of the proposed change. In addition, the Construction Contractor will include a field review by the environmental monitors assessing the potential affects to cultural, biological, paleontological, or other resources, as appropriate.

Once the CIC has received the request, a determination will be made as to whether or not it constitutes a minor or major deviation (see below). If minor in nature, the CIC will provide the Construction Contractor, within a 24-hour period, both a verbal and a written decision either approving or rejecting the request. If major in nature, the CIC will forward the request to the BLM Project Manager with a recommendation for approval or rejection. The BLM Project Manager will have up to five working days to review the request and provide a decision. It is important to note that some requests may require additional review and approval periods (over 30 calendar days) if they involve other regulatory agencies.

All variance approvals will be documented in the CIC daily and weekly reports. Any special status species that could be impacted by modifications will be mitigated under the direction of the CIC prior to implementation. All changes to the COM Plan dictated by unique field conditions or construction changes will be submitted in an “as built” format at the conclusion of construction. Minor and major deviations are defined below.

#### **4.4.2 Minor Deviations**

When the variance requested is for an action that has been assessed in the NEPA document for the projects, and the resultant disturbance area is within the existing approved temporary and permanent rights-of-way, the CIC will have the authority to approve or deny the requested variance. This empowerment of the CIC to approve minor variances will expedite the projects while protecting resource values.

Minor deviations that occur will not require amending the right-of-way or cause any re-initiation triggers for the BO or other environmental documents. Minor changes include disturbance areas within the existing approved temporary and permanent right-of-way.

If the review by all the resource monitors identifies no resource constraints then the request will be considered a minor deviation. If constraints are identified, then the deviation will have to be modified to avoid the constraint or it will be considered a major deviation.

Examples of minor deviations that could be approved by the CIC are:

- Modification of disturbance areas within the authorized right-of-way and temporary use boundaries. Fees will be reconciled at project construction completion.
- Moving the location of erosion control devices, culverts, temporary fences, pulling or tensioning locations, temporary work sites, access point to poles/structures, and cable spool storage locations within authorized areas.
- Modifications of new access road alignments that fall within the extent of previous cultural resource surveys to avoid impacts to plants and wildlife, or to use existing previously disturbed roads that require no improvement.
- Additional pull-out and or parking areas where access road traffic or work areas are constrained that fall within the extent of previous cultural or biological resource surveys. Additional small, short-term, single instance, setup areas needed outside of the temporary or permanent rights-of-way.
- Change in helicopter landing zones due to terrain, safety concerns, or to avoid or reduce environmental impacts.
- Improvement to existing access roads that have been examined for cultural, paleontological, or biological resources and none were identified (see Appendix A2 – Transportation Management Plan for a definition of Improved Access).

#### **4.4.3 Major Deviations**

Major deviations involve an action not previously assessed in environmental documents for the projects (COM Plan, EIS, EA, cultural resources reports, BO, etc.) that would require a more thorough review by the BLM Project Manager and resource specialists, or that would require consultation with other regulatory agencies (USFWS or State Historic Preservation Office).

Examples of major deviations that would need approval from the BLM Project Manager include:

- Relocation of a tower or structure outside of the approved right-of-way.
- Use of an unapproved access road that would result in a potential impact to sensitive cultural, biological, or paleontological resources.
- Any discovery situation resulting in a temporary work-stoppage as outlined in the Historic Properties Treatment Plan (HPTP) (see Appendix C1).
- Work to occur in areas that are closed due to seasonal restrictions as identified in the COM Plan and BO.