

**Tri-State Montrose-Nucla-Cahone Transmission Line  
Improvement Project**

**Draft Plan of Development**

**Montrose, Ouray, San Miguel, and Dolores Counties, Colorado**

**Appendix H**

**Draft Blasting Plan**

## Appendix H

### Draft Blasting Plan

The objective of this Draft Blasting Plan is to detail practices designed to address potential impacts from construction of the Tri-State Montrose-Nucla-Cahone Transmission Improvement Project (Project). Tri-State Generation and Transmission Association (Tri-State) has developed this plan as part of the Plan of Development (POD) that accompanies its application to the Bureau of Land Management (BLM) for a Right of Way (ROW) grant. If the ROW grant is approved, the final POD and all appendices will be attached to the Decision Record. This plan provides guidance to construction and field personnel on measures identified by Tri-State, BLM and US Forest Service (FS) to minimize effects during construction activities associated with the Project. It will be the responsibility of Tri-State and its project contractors, working with designated environmental inspectors, to comply with measures identified in this plan.

At the time the National Environmental Policy Act (NEPA) POD was prepared, it was not known if blasting would be required for construction of the Project. If the project is permitted, geotechnical investigations will occur when a final alignment has been approved by the BLM. Excavations for transmission line structures where the construction contractor may encounter hard rock may require blasting activities to complete these excavations. If blasting is required, the construction contractor will be required to prepare a blasting plan for the Project that will be included in the Final POD.

The blasting plan will be consistent with all requirements of the Bureau of Alcohol, Tobacco, and Firearms; Department of Homeland Security; BLM, and FS. The blasting plan will address the types of explosives; storage, security, and general use of explosives; the contractor's proposals for compliance with agency requirements; and the general concepts proposed to achieve the desired excavations. The blasting plan will address proposed methods for controlling fly rock, providing blasting warnings, and use of non-electrical blasting systems. The contractor will be required to maintain explosives logs during construction. The plan would also address notification of agencies and public, using signage and flaggers if required near recreation areas or other sensitive areas identified in the POD. Once blasting locations are identified, Tri-State will work with land managing agencies, to ensure the timing of blasting is in compliance with other components of the POD.

The goal of the blast pattern will be to break the rock toward the center hole while leaving the material *in situ* with no fly rock. Truck-mounted, heavy-duty auger equipment will then be used to remove the cracked rock from the hole. Blasting near buildings, structures, facilities, and other resources susceptible to vibration or air blast damage will be carefully planned by the contractor and Tri-State and controlled to eliminate the possibility of damage to such facilities and structures. For example, patterning the explosives inward to the open center hole, along with possible matting of the shot hole, limits ground acceleration and vibrations to ensure peak particle velocities at potentially sensitive resources will not exceed 0.75 inch per second per BLM Manual H-3150-1, Onshore Oil and Gas Geophysical Exploration Surface Management.

When used, blasting will take place between sunrise and sunset and will be brief in its duration (milliseconds). Rock anchoring or micropile systems will be used in areas where site access is limited or where adjacent structures or potentially sensitive resources could be damaged as a result of blasting or rock hauling activities.

Transportation, handling, storage, and use of explosives will comply with OSHA 1926, Subpart U, "Blasting and the Use of Explosives." The Contractor will obtain all required permits and comply with all

state and local laws, ordinances, applicable safety code requirements, and regulations relative to the handling, storage, and use of explosives and the protection of life and property.

The following measures will be followed for blasting activities, if warranted for construction:

- Blasting will be conducted between sunrise and sunset.
- Contractor will provide the Tri-State Inspector anticipated blasting plans 1 week prior to the proposed date. The Inspector will immediately notify the Tri-State Land Department to ensure adequate time to contact the applicable landowners near the blasting area.
- Tri-State Land Department will notify the affected adjacent property occupants a minimum of 24 hours prior to any blasting.
- The Contractor will erect signboards that meet OSHA requirements, stating that blasting operations are taking place in the area and such signs will be clearly visible at all points of access to the area. The Contractor will utilize a reliable audible warning system to ensure that all personnel in the area are forewarned of the impending detonation of explosives.
- Blast mats will be used as required to control flyrock.
- Blasting will not be allowed in or near streams without adequately protecting the stream from debris.
- Blasting in the vicinity of buildings, structures, and other facilities susceptible to vibration or air blast damage will be carefully planned and controlled to eliminate the possibility of damage to such facilities and structures.

A blasting plan will detail compliance procedures to ensure safety and reduce impacts from anticipated short-term increase in noise levels.

### ***References***

Occupational Safety & Health Administration. (1998). *OSHA 1926, Subpart U, Blasting and the Use of Explosives*.

Bureau of Land Management. (2007 update). *Manual H-3150-1 - Onshore Oil and Gas Geophysical Exploration Surface Management*.