

Milford, NH Town Questions
Kinder Morgan Responses
April 2, 2015

1. How does KM plan to address contamination of surface and ground water from blasting emulsions and compounds from drilling, blasting, rock crushing and excavation using heavy equipment?

Response:

Tennessee has engineering and construction standards that address these issues. Construction procedures and standards are discussed in the draft Resource Report 1 (General Project Description), provided in the March 13, 2015 filing of the Environmental Report (http://www.kindermorgan.com/pages/business/gas_pipelines/east/neenergydirect/ferc.aspx).

Tennessee does not anticipate the Project to have any impact on groundwater or surface water quality or supply. Further details can be found in Resource Report No. 2 (Water Use and Quality). Resource Report No. 6 (Geological Resources) contains additional details on blasting impacts and mitigation measures.

2. What is done with ledge that is crushed and/or removed?

Response:

Tennessee is in the process of developing a construction management plan to address rock management. Options being considered include using rock crushers to create material for roadways, backfilling compressor and meter station foundations, facility yard gravel, concrete aggregate, railroad ballast and using rock as authorized by landowners for rock boulder barricades across the easement along property lines.

Please refer to the draft Resource Report 1 (General Project Description) filed with the Federal Energy Regulatory Commission (FERC) on March 13, 2015 as part of the draft Environmental Report for further specifics regarding rock removal.

3. What is the source of fill, if used? How is it tested for possible invasive contamination?

Response:

Please refer to the draft Resource Report 1 (General Project Description) filed with the Federal Energy Regulatory Commission (FERC) on March 13, 2015 as part of the draft Environmental Report for further specifics regarding backfill.

4. Will the pipeline being (sic) located within the existing powerline corridor timber cut?

- **If yes, will additional width have to be cut, and if so how much?**
- **If no, how wide will the new corridor timber cut have to be?**

Response:

The current route of NED Project, in part, is proposed to be located parallel and adjacent to, and, may, in some cases, overlap with existing utility easements (pipeline or electric

utility). Refinement to the pipeline alignment will continue to occur as the Project is developed through the FERC's pre-filing and certificate processes, which will incorporate information gained from field surveys, landowners, and other stakeholder input.

Tennessee's current pipeline alignment for the Project along utility corridors is proposed to be generally located five (5) feet outside the existing utility easement. Tennessee's permanent easement will generally be centered on the proposed pipeline. Depending on final field surveys and discussions with landowners, utility easement owners, and other stakeholders, the location and configuration of temporary work spaces will be determined.

Tennessee continues to have discussions with utility companies regarding co-location opportunities near/along utility corridors. Although exact alignments have not been finalized, Tennessee anticipates that additional right-of-way (ROW) clearing will be required for Project construction.

In new areas where there is no existing utility corridor, the new permanent easement, or ROW, for operation and maintenance of the pipeline would likely be 50 feet wide, generally 25 feet on either side of the centerline of the pipeline. In addition to the permanent easement, an additional 50 to 75 feet of temporary workspace would be needed for use during construction. Some site-specific areas, like road crossings, will require additional temporary workspace to allow for specialized construction techniques and to allow safe construction of the Project facilities.

The width of the ROWs may differ depending on the location and topography of the land. This will be discussed with each individual landowner during easement discussions.

Please refer to the draft Resource Report 1 (General Project Description) filed with the FERC on March 13, 2015 as part of the draft Environmental Report for further discussion regarding clearing, grading, and fencing.

5. How long will the work in Milford take?

Response:

The construction duration in Milford, including clean-up, is not yet determined, since several factors will dictate such, including anticipated receipt of environmental permits, landowner agreements and integration with the construction schedule for the entirety of the pipeline through New Hampshire. The actual construction duration likely will take 3-4 month total from start to finish, yet the actual construction time may be as little as a few weeks from start to finish, with clean-up, restoration and revegetation to be completed three days or less after final grading, as weather and site conditions allow.

6. When will the work be executed?

Response:

The currently proposed construction start date for the Project is January 2017, assuming receipt of necessary authorizations. ROW clearing and horizontal directional drills (HDD's) are anticipated to occur during 2017. Mainline pipeline construction in New Hampshire is anticipated to begin in the spring of 2018.

7. Timing of work (breeding season disturbance)?

Response:

Pipeline construction in general results in temporary impacts to wildlife and the environment. Construction planning and permitting includes consideration of the effects on wildlife and the environment. During construction, Tennessee would comply with all requirements imposed by FERC and other federal and state agencies, as well as its own industry-standard procedures, to avoid and minimize the effects of construction on the environment. Wildlife protection and environmental measures are further addressed during post-construction site restoration. The FERC will monitor and inspect Tennessee's ROW restoration activities to ensure compliance with all applicable conditions and requirements.

Please refer to the draft Resource Report 1 (General Project Description) and Resource Report 3 (Fish, Wildlife, and Vegetation) filed with the FERC on March 13, 2015 as part of the draft Environmental Report for further discussion regarding the anticipated Project construction schedule.

8. Wetland crossings - What crossing method(s) are proposed?

Response:

Wetland crossings construction techniques are being evaluated. Tennessee will consider open cut dry, open cut wet, and trenchless technologies. The final determination of the wetland crossing technique will be set forth in applicable permits.

Please refer to the draft Resource Report 1 (General Project Description) and Resource Report 2 (Water Use and Quality) filed with the FERC on March 13, 2015 as part of the draft Environmental Report for further discussion regarding proposed wetland crossing construction.

9. Drainage/run-off control measures during work

Response:

Please refer to the draft Resource Report 1 (General Project Description) filed with the FERC on March 13, 2015 as part of the draft Environmental Report for further discussion regarding erosion and sediment control.

10. What will be done with the soil displaced by the pipeline

Response:

Please refer to the draft Resource Report 1 (General Project Description) filed with the FERC on March 13, 2015 as part of the draft Environmental Report for further discussion regarding backfilling and grade restoration.

11. Will all excavations return the disturbed terrain to its previous form?

Response:

Please refer to the draft Resource Report 1 (General Project Description) and Resource Report 8 (Land Use, Recreation, and Aesthetics) filed with the FERC on March 13, 2015 as part of the draft Environmental Report for further discussion regarding backfilling and grade restoration.

Roads

1. Will any new permanent roads or vehicular access trails be required? If so, where?

Response:

New and temporary and permanent access roads will be required for the Project. These are being evaluated and they will be identified and included in the certificate application for the Project that will be filed with the FERC.

Please refer to the draft Resource Report 1 (General Project Description) and Resource Report 8 (Land Use, Recreation, and Aesthetics) filed with the FERC on March 13, 2015 as part of the draft Environmental Report for further discussion regarding access roads.

2. Will any temporary roads or vehicular access trails be required? If so:

- **Where?**
- **Will tree removal be required?**
- **What restoration work will be performed when job is complete?**

Response:

Temporary roads and vehicular access trails will be required. The locations of these are being evaluated and they will be identified and included in the certificate application for the Project that will be filed with the FERC,.

Please refer to the draft Resource Report 1 (General Project Description) and Resource Report 8 (Land Use, Recreation, and Aesthetics) filed with the FERC on March 13, 2015 as part of the draft Environmental Report for further discussion regarding temporary roads and vehicular access trails.

Access

1. Will there be any public access restrictions where previously there were none?

Response:

There should not be any public access restrictions where previously there were none.

Please refer to the draft Resource Report 1 (General Project Description) and Resource Report 8 (Land Use, Recreation, and Aesthetics) filed with the FERC on March 13, 2015 as part of the draft Environmental Report for further discussion regarding land requirements.

Permanent changes

1. If there are any significant permanent changes to local hydrological conditions as evidenced by wetland changes or surface erosion, will KM undertake to ensure restoration of the original conditions?

Response:

Tennessee does not anticipate any significant permanent changes to local hydrological conditions as a result of the Project.

Please refer to the draft Resource Report 1 (General Project Description). Resource Report 2 (Water Use and Quality), and Resource Report 3 (Fish, Wildlife, and Vegetation) filed with the FERC on March 13, 2015 as part of the draft Environmental Report for further discussion regarding backfilling and grade restoration.

2. Are there areas requiring known period or aperiodic maintenance?

Response:

Tennessee is required to maintain its ROW on a periodic basis.

Please refer to the draft Resource Report 1 (General Project Description) filed with the FERC on March 13, 2015 as part of the draft Environmental Report for further discussion regarding post-construction maintenance requirements.

3. How will the pipeline course be permanently marked?

Response:

In compliance with federal regulations, signs, marker posts, aerial markers, and decals will be installed and maintained to ensure that the pipeline locations will be visible from the air and ground.

4. Any structural installations above ground? If so:

- **Area and height**
- **Area of paved surface**
- **Operating Noise level and constant or intermittent?**

Response:

One new compressor station, one meter station, rectifier stations and mainline block valve sites are currently proposed for Hillsborough County, New Hampshire. The locations of these facilities are not final and are being evaluated.

Please refer to the draft Resource Report 1 (General Project Description) filed with the FERC on March 13, 2015 as part of the draft Environmental Report for further discussion regarding land requirements, buildings, and noise.

5. Monitoring equipment to be installed?

Response:

Please refer to the draft Resource Report 1 (General Project Description) filed with the FERC on March 13, 2015 as part of the draft Environmental Report for further discussion regarding infrastructure facilities.

6. Radio antenna masts/towers? If so, how tall?

Response:

The communications system for the Project is being evaluated and the need for radio antenna masts/towers has not been determined.

Please refer to the draft Resource Report 1 (General Project Description) filed with the FERC on March 13, 2015 as part of the draft Environmental Report for further discussion regarding infrastructure facilities.

7. Any illumination anywhere along the route or at installations? All-night? Motion-triggered?

Response:

The new compressor stations will have low illumination lighting, with hoods to direct the light downward. The low illuminating lighting will be installed above the doors and possibly the building corners. These will remain on throughout the night. In addition, station yard lighting will be installed. That lighting will be manually lit as needed.

8. Any vegetative maintenance (brush clearance) other than that routinely conducted for the power lines?

Response:

For the majority of its system, Tennessee maintains its easements by mechanical means (e.g., tractor with mower or bush hog). In some instances, as approved by landowners and regulatory agencies, herbicides may be applied in certain fenced locations (typically at compressor stations or above-ground sites such as valves, pig launchers or pig receivers).

9. Any chemical control of vegetation? If so what chemicals? Frequency of application? Area (sq. ft.) affected?

Response:

See above response to Question 8.

10. Any fencing?

Response:

Above ground facilities such as compressor stations, meter stations, mainline valve settings will be fenced and locked.

Please refer to the draft Resource Report 1 (General Project Description) filed with the FERC on March 13, 2015 as part of the draft Environmental Report for further discussion regarding fencing.

In the event of malfunction

1. Are there additive chemicals in the gas stream? If so what are they?

Response:

Natural gas is colorless and odorless. Tennessee will add a distinctive and pungent odorant (Mercaptan) to the natural gas to help people detect its presence. A new odorization facility will be constructed as part of one of the New York compressor stations. No odorization facilities are planned for New Hampshire.

2. In the event of a leak will all contents eventually evaporate close to the leakage point?

Response:

Leaks or inadvertent releases are very rare. Natural gas is lighter than air and if it escapes, it will rise and dissipate.

Please refer to the draft Resource Report 11 (Reliability and Safety) filed with the FERC on March 13, 2015 as part of the draft Environmental Report for further discussion regarding reliability and safety issues.

3. In case of breach/rupture

- **Who are the first responders?**
- **What is the estimated arrival time of response teams equipped to undertake repairs**

Response:

Please refer to the draft Resource Report 11 (Reliability and Safety) filed with the FERC on March 13, 2015 as part of the draft Environmental Report for further discussion regarding emergency response.

Other

1. How many HCAs (high consequence areas) are along the pipeline?

Response:

The exact number of HCAs continues to be evaluated. Information regarding identified HCAs will be included in future submittals of the Environmental Report to the FERC.

2. Will there be meter stations or other facilities within the HCAs?

Response:

The exact number of HCAs has not yet been determined. Currently, there is one planned meter station in Hillsborough County, New Hampshire but it cannot be determined at this time if it is within an HCA.

3. Do you plan on installing any compressor stations along this route?

Response:

As set forth in the March 13, 2015 draft Environmental Report filing, Tennessee is proposing to construct nine new compressor stations and 15 new meter stations as part of the NED Project, as well as modifications to existing compressor and meter stations along the route. One of the proposed compressor stations would be an approximately 80,000 horsepower (hp) station that would be located along the proposed pipeline route in Hillsborough County, New Hampshire.

The exact final location of this compressor station, like all other proposed new compressor stations for this project, have not yet been determined, but will be identified in further submittals of the Environmental Report to the FERC.

4. What will be your assessment method under 49CFR192 Subpart O for these HCAs?

Response:

An HCA can be identified by using either of the two methods below. Tennessee exclusively employs Method 2 to identify High Consequence Areas.

Method 1 is an area defined as either:

- a) A Class 3 or Class 4 location
- b) Any area in a Class 1 or Class 2 location where the potential impact radius is greater than 660-feet (200-meters) and the area within a potential impact circle contains 20 or more buildings intended for human occupancy

- c) The area in a Class 1 or Class 2 location where the potential impact circle contains an identified site.

Method 2 is the area within a potential impact circle containing either:

- a) Twenty or more buildings intended for human occupancy
- b) An identified site.

5. What is the MAOP of the pipeline and the operating stress?

Response:

The maximum allowable operating pressure (“MAOP”) and maximum operating pressure (“MOP”) varies for the proposed pipeline, with some laterals operating at different pressures. The approximately 71 miles of 36-inch diameter pipeline proposed for New Hampshire will be designed for a MAOP and MOP of 1,460 pounds per square inch (“psig”). Approximately 1.99 miles of the 7.71-mile, 20-inch Haverhill Lateral and 5.08 miles of the 13.98-mile, 12-inch Fitchburg Lateral Extension will also be located in New Hampshire. Haverhill Lateral will have an MAOP of 1,460 psig and a MOP of 750 psig. The Fitchburg Lateral Extension will have a MAOP and MOP of 1,460 psig. The operating stress depends on the area classification established. Area classifications are being evaluated.

6. How often will RCV be utilized?

Response:

Tennessee will be using remote controlled valves (RCV’s) as part of the design. Valve spacing is determined by many factors but minimum spacing is defined in 49 CFR 192. In areas of low population density (Class 1), valves may be up to 20 miles apart. In areas of medium population density (Class 2), valves may be up to 15 miles apart. In areas of high population density (Class 3), valves may be up to 8 miles apart. The locations of the RCVs are being determined as part of the route evaluation including the area classifications.

Please refer to the draft Resource Report 1 (General Project Description) filed with the FERC on March 13, 2015 as part of the draft Environmental Report for further discussion regarding facility siting.

7. What is the burial depth of the pipeline?

Response:

The pipeline will generally have three (3) feet of cover. The burial depth will vary depending on the area and land use. For example, the pipeline will be buried deeper in agricultural areas under active cultivation and across rivers and stream, roads, and railroads.

8. Will you be utilizing HDD technologies to install the pipeline and if so what are the HDD lengths?

Response:

Tennessee will be using HDD and other proven construction techniques. The HDD lengths vary at specific locations along the pipeline route. Two HDDs are planned in nearby Amherst, but none are planned in Milford at this time.

Please refer to the draft Resource Report 1 (General Project Description) filed with the FERC on March 13, 2015 as part of the draft Environmental Report for further discussion regarding HDD and other construction methods.

9. How often do you plan to do leak surveys and how will they be completed? By foot or by air?

Response:

The safety of the nation's interstate natural gas pipeline network is regulated by the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA), which administers the Natural Gas Pipeline Safety Act of 1968 and subsequent amendments. PHMSA is responsible for implementing pipeline safety laws and regulations, which establish requirements to ensure that pipelines are constructed and operated safely. Tennessee closely monitors pipeline operations, including line pressure and surveillance of the pipeline to detect leaks and protect against third-party damage. Tennessee also uses state of the art, in-line inspection tools, known as smart pigs, to periodically internally inspect the pipeline in accordance with PHMSA requirements for potential damage, erosion or corrosion. Any damage or corrosion detected through this process is repaired or replaced.

On Tennessee's existing system, the company currently performs aerial patrols every other week from April through October and once per month from November through March. Such patrol frequency exceeds the requirements set forth in CFR Part 192.706.

Please refer to the draft Resource Report 11 (Reliability and Safety) filed with the FERC on March 13, 2015 as part of the draft Environmental Report for further discussion regarding reliability and safety issues.

10. What is your plan for third party damage prevention? Considering the residential route and shared easement would you consider patrolling the pipeline daily?

Response:

Tennessee obtains an approximately 50-foot wide permanent ROW to distance third party construction activities from accidentally damaging pipelines. This gives the company room to safely operate and maintain the pipeline. A safety feature being installed by Tennessee to help prevent third party damage over and above CFR Part 192 requirements is to install 1-foot wide yellow warning tape 2-feet above the pipeline to alert third parties of the presence of the pipeline and to immediately contact Tennessee Gas.

Tennessee also actively participates in all applicable One Call programs to help prevent third-party damage. Company representatives will meet landowners and contractors to discuss excavation and mark all pipelines prior to excavation when provided with notification by state One Call programs. Tennessee also will have a company employee on site to observe digging operations around its pipelines.

As noted in the response to question 9 above, aerial patrols are done periodically and one of the responsibilities of this is to identify unusual activity near the pipeline including new construction.

Please refer to the draft Resource Report 11 (Reliability and Safety) filed with the FERC on March 13, 2015 as part of the draft Environmental Report for further discussion regarding reliability and safety issues.

11. What type of coating system are you planning to use on the pipeline?

Response:

The primary corrosion protective coating will be fusion bonded epoxy coating. Other protective coatings such as abrasion resistant overlay (ARO) and concrete coating are being evaluated.

Please refer to the draft Resource Report 1 (General Project Description) filed with the FERC on March 13, 2015 as part of the draft Environmental Report for further discussion regarding pipeline coating.

12. Considering the rocky environment of your route will you be using additional coatings such as an ARO (abrasion resistant overcoat) along with select backfill?

Response:

Tennessee will evaluate the use of ARO, concrete coating, or other protective coating(s) and will also provide select backfill around the pipe as means of protecting the pipe coating from damage through rocky areas.

13. What type cathodic protection system (corrosion protection) are you planning to use? Impressed current or galvanic system?

Response:

Tennessee has hired a specialist engineering firm to design the cathodic protection system. Impressed current using ground beds and rectifiers and galvanic systems are being considered. The system selected will be established based on many factors including soil resistivity.

Please refer to the draft Resource Report 1 (General Project Description) and Resource Report 11 (Reliability and Safety) filed with the FERC on March 13, 2015 as part of the draft Environmental Report for further discussion regarding cathodic protection.

14. Will you need additional easements outside of the shared easement for your cathodic protection systems?

Response:

Additional easements outside of the currently identified permanent easement may be required depending on the cathodic protection system selected. If additional easements are required, they will be identified as part of the certificate application to be filed with the FERC.

15. If utilizing HDD technologies, how do you plan to cathodically protect these sections?

Response:

Impressed current and sacrificial anodes are being evaluated by the specialty design engineering firm, referred to in the response to question number 13 above, to protect the pipeline installed using HDD technology.

16. Considering HDD sections how do you plan to install test facilities on these sections in order to monitor cathode protection effectiveness?

Response:

Test stations will be installed immediately upstream and/or downstream of an HDD section.

17. Will your cathodic protection designs consider interference effects on other metallic structures? If interference effects exist or damage occurs to other structures due to your system, what is your action plan?

Response:

The cathodic protection detailed design will include minimizing impacts to the environment including interference affects to/from foreign underground structures. If interferences are determined, Tennessee will work with the owner of the other structure to resolve the issue.

18. Considering the shared easement with high voltage AC what is your plan to protect you personnel and the public from induced AC effects? How do you plan to mitigate AC corrosion?

Response:

A portion of the proposed pipeline will be located adjacent to or co-located with high voltage electric power lines. Tennessee has hired a specialist design engineering firm to design an alternating current ("AC") mitigation system that will protect the pipeline facilities and operations personnel from induced voltage. It is anticipated that the design will include installation of zinc ribbon installed in the pipeline trench, grounding mats at aboveground facilities and other appurtenant equipment, most of which will be buried.

Please refer to the draft Resource Report 1 (General Project Description) and draft Resource Report 11 (Reliability and Safety) filed with the FERC on March 13, 2015 as part of the draft Environmental Report for further discussion regarding cathodic protection.

19. Do you plan to monitor AC voltages once a mitigation system is installed for the pipeline?

Response:

Tennessee will regularly monitor AC voltages on the pipeline once the mitigation system is installed.

Please refer to the draft Resource Report 1 (General Project Description) and Resource Report 11 (Reliability and Safety) filed with the FERC on March 13, 2015 as part of the draft Environmental Report for further discussion regarding cathodic protection.

20. Considering the nature of shale gas, what is your mitigation plan for internal corrosion?

Response:

All natural gas delivered to the Tennessee system for transportation is required to comply with Tennessee's pipeline quality standards, set forth in its FERC Gas Tariff.

Tennessee Gas has a comprehensive internal corrosion monitoring and mitigation program that includes the following:

- Gas filtering by the producers and Tennessee at receipt points and Tennessee compressor stations (filter separators).
- Gas quality monitoring on Tennessee system by chromatographs.
- Liquid and solid sampling program and analysis to identify the potential for internal corrosion.

- Internal corrosion monitoring by corrosion coupons installed at receipt points, compressor stations, and other locations.
- Maintenance cleaning pigs run on a regular basis to internally clean the pipeline
- Tennessee conducts annual internal corrosion reviews at all Tennessee locations.
- PHMSA prescribed periodic in-line inspections with “smart pig” devices.