

## PRACTICES AND DESIGN IN EXCESS OF REGULATORY REQUIREMENTS



At Energy Transfer and with the Rover Pipeline, safety is our top priority. Our goal is to provide the safe and reliable transportation of natural gas for our customers. Rover Pipeline implements all federal standards into the design and operations of the pipeline, and in many instances, we exceed federal standards to ensure a safe and reliable pipeline.

The pipeline route that is located around the Silver Lake location in Michigan is designated as a Class 3 area. Because of this Class 3 designation, there are higher safety requirements factored into the construction, design and eventual operations. Additionally, Class 3 pipes are designed with stricter safety guidelines and enhanced safety factors for operation.

**Some of these safety measures include, but are not limited to:**

- *Closer valve placement*
- *Thicker pipe wall*
- *Additional depth of cover over the pipeline*
- *Hydrotesting to a higher pressure before in service*
- *More frequent aerial patrols during operation*
- *More stringent pipeline integrity program for the life of the pipeline*

**Using advanced technology and a proven safety design, the project has added extra safety features that exceed federal requirements and will ensure minimal impacts to the environment and local communities along the route. Some of those features are outlined on this handout.**

DOT CFR 192 Requirements	Rover Pipeline Silver Lake Corridor Standard	Benefit of Exceeding Requirement
<b>Pipeline Coverage and Separation Distances</b>		
The minimum cover required for Class 3 pipe locations in normal soil is <b>36 inches</b> .	Rover will provide a minimum coverage (from the top of the pipe to the ground level) of <b>60 inches</b> .	The additional depth of coverage helps to protect the pipeline from third-party damage.
The code requires a minimum of <b>36 inches</b> of coverage for waterbody crossings.	Rover will provide a minimum coverage of at least <b>60 inches</b> for waterbody crossings.	The additional depth of coverage helps to protect the pipeline from third-party damage.
<b>Pipeline Valves</b>		
The code requires for a Mainline Valve to be placed within <b>4 miles</b> of a Class 3 location. Class location is based off of population density.	Rover has made a commitment to place a Mainline Valve within <b>3 miles</b> of this Class 3 location.	By installing more closely spaced valves, Rover will enhance safety and control by isolating the pipeline into smaller segments.
The requirement states that manual operators must be available for the valves on the pipeline. Rover is <b>not required</b> to install valves that are remotely operated.	All Mainline Valves will have motorized actuators that enable the valves to be remotely and quickly closed to isolate pipeline segments.	The motorized actuators help to remotely isolate the pipeline by valve section and help reduce the time to respond if there should be a need.
	All Mainline Valves will be equipped with Line Break Technology that is designed to close valves automatically if there is a detection of sudden decrease in pressure.	The Line Break Technology will reduce the reaction time should there be a sudden decrease in pressure.
<b>External Coating</b>		
The code requires the pipeline to use some type of corrosion preventative coating.	Rover will use Fusion Bonded Epoxy (FBE) to externally coat the pipe.	The FBE provides a high-quality protection for the pipeline and provides a non-shielding solution.
The code requires the pipeline has a corrosion preventative coating at all railroad crossings.	Rover will coat the pipe with 14 to 16 mils of FBE and 40 mils of Abrasion Resistant Overlay Coating (ARO).	The combination of coating will provide both a cathodic protection and an abrasion-resistant solution.



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<b>Pipeline Strength</b>		
The requirement states that the pipe must be specifically engineered for its purpose.	Rover pipe is specified to API 5L, PLS-2 standards which mandate additional metallurgical requirements, factory inspections and record retention. Additionally, the longitudinal seam of all pipe has been 100% examined by Non-Destructive Testing (NDT).  All pipe mills were inspected for their quality assurance and quality testing programs prior to being allowed to bid as a contractor for the project.	The higher quality of pipe standards increase the resistance to third-party damage, shipping damage and overall pipe body cleanliness and weldability.
Inspection is required at the job site during installation.	For Rover, inspectors were placed in each pipe mill while the pipe was being produced, and inspection is carried out all the way through installation.	This additional inspection ensures full compliance with quality control measures and additional safety and serviceability.
<b>Pipeline Integrity Testing</b>		
The line is required to be hydrotested for 8 hours above the Maximum Allowable Operating Pressure (MAOP) criteria:  1.1 X MAOP for a Class 1 pipe, 1.25 X MAOP for a Class 2 pipe, 1.5 X MAOP for a Class 3 pipe.	Rover will exceed the requirements by testing the pipe to higher pressures or a minimum of 90% Specified Minimum Yield Strength based on class design.  1.25 X MAOP in Class 1, 1.5 X MAOP in Class 2, 1.8 X MAOP in Class 3.	This is a requirement of Energy Transfer's Engineering Standards. It establishes test criteria above and beyond what is required and provides additional safety.
There is no code that requires that we perform an in-line inspection for the entire pipeline prior to start-up.	An in-line deformation run will be performed after completion of the hydrostatic testing to identify and address any potential defects.	This will help to validate the pipeline's integrity, further ensuring safety.
The code requires that we perform Non-Destructive Testing (NDT), by either radiographic or ultrasonic methods, for 10% of the girth welds made by each welder each day.	100% of all mainline girth welds will perform NDT inspection.	This helps to validate the welding, which ensures their integrity and the strength of the pipeline.
<b>Operations</b>		
The code requires inspection of the right-of-way during operations.  Class 3 pipelines must be inspected at least every <b>7.5 months and 4.5 times a year at highways and railroad crossings</b> .  The state of Michigan requires inspection <b>12 times per year</b> .	Rover right-of-way will be inspected by aerial means <b>once every 7 days</b> , weather permitting.	The aerial view provides visual information and provides increased awareness of activities taking place along the pipeline route.
The code requires Rover must engage in a program that mitigates potential third-party damage.	Rover supports statewide local One-Call Centers to identify underground utilities for third parties working in the area.	This system helps to protect the pipeline from accidental damage due to local digging or construction in the area.
The code requires that we employ controllers to monitor and respond to potential emergencies.	A Gas Control Operations Center will monitor the pipeline <b>24 hours a day, 7 days a week</b> .	Highly skilled personnel can identify changes in operating conditions and can respond quickly.
	Rover will employ local personnel and maintenance resources within <b>10 miles</b> of the Silver Lake Location.	This will give Rover the ability to quickly respond to any local reports of abnormal activity and mitigate third-party encroachment that could harm the pipeline.