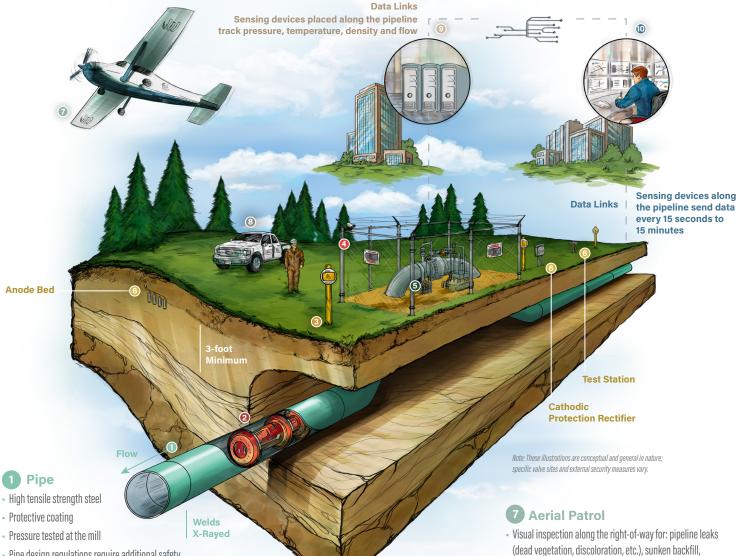
ENERGY TRANSFER

# PIPELINE OPERATIONS AND SAFETY OVERVIEW

Energy Transfer has a comprehensive pipeline integrity program that enables us to monitor our assets 24 hours a day, 7 days a week, 365 days a year. Pipeline operations personnel are trained and qualified in accordance with pipeline safety regulations. Qualifications cover all aspects of operations and maintenance and are periodically reassessed as required.



- Pipe design regulations require additional safety factor in higher risk areas such as road crossings, river crossings and high population areas
- All welds 100% x-rayed or NDE inspected
- Pressure tested at a minimum of 125% of maximum operating pressure

# 2 In-Line Inspection Tools

 There are various tool technologies that may be used to identify and measure metal loss from corrosion and gouges, identify dents and other deformations, and detect longitudinal cracks and crack-like defects

# **3** Pipeline Markers

- Pipeline markers and warning signs indicate approximate location of the pipeline
- Located at frequent intervals along the pipeline right-of-way
- List product, name of the pipeline operator, and operator's telephone number in case of an emergency
- Display 811 "Call Before You Dig" notification phone number

### 4 Security

- Chain link security fencing
- Security camera and monitoring

# 5 Valves

- Both automated and manual valves are strategically placed along the pipeline
- Can be used to stop flow along a certain section of pipe
- Inspected periodically in accordance with regulations
- A variety of valves are used both above and below ground

### 6 Cathodic Protection

- Inhibits corrosion by application of electrical current with anode bed
- Effective protection requires very low DC voltage
- Entire pipeline is protected below ground
- Inspected and tested annually, rectifier inspected every other month
- Test stations approximately one mile apart

exposed pipe, land erosion and unauthorized excavation

- Visual inspections and surveillance of the pipeline

- Maintenance and inspections of equipment and valves

- Control system that uses computers and networked data

- Sends critical information to pipeline operations teams

- Automates data logging and processing

**10** Control Center

unusual activity along the pipeline

rates in the pipeline

pipeline at all times

**Supervisory Control and Data** 

**Acquisition (SCADA) Systems** 

- Centralized control center to immediately and easily adjust flow

- Pipeline engineers know exactly what is happening along the

Can guickly react to equipment malfunctions, leaks, or any other

8 Ground Patrol

along the right-of-way