Know Spectra Energy’s Pipeline Integrity Management Program
Pipeline integrity management is a systematic approach for identification and mitigation of potential risks to the pipeline. The Pipeline Safety Improvement Act of 2002 mandated that the U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration (PHMSA), issue regulations that require operators of natural gas transmission pipelines to develop and implement Integrity Management Programs for pipelines in High Consequence Areas (HCAs). Spectra Energy has implemented a comprehensive Integrity Management Program that meets, and in many cases exceeds, these regulations. HCAs are defined further below.
Our pipeline integrity management team provides expertise in risk management. They manage the identification, assessment and mitigation of risk, as it relates to pipeline design and construction, system operations and system integrity. Throughout the year, our integrity team works with the various experts throughout our company and beyond to promote the inclusion of appropriate information and data into the integrity database. Additionally, our integrity team confirms that the technical content of the data is correct through a data validation process, including review by our local field operators and various subject-matter experts.

The following is a brief summary of the key elements of our integrity management program.

High Consequence Area (HCA) Identification
Integrity management regulations require pipeline companies like ours to identify HCAs located along the pipeline. HCAs are designated locations along the pipeline that are near either densely populated areas, facilities that would be difficult to evacuate (such as hospitals or schools), or locations where people congregate (such as churches, offices or parks). The federal regulations include specific criteria for pipeline companies to identify and designate HCAs.
We use a number of methods to look for HCAs to assure we identify all HCAs along our pipeline, including aerial photography, field surveys, consultation with emergency response officials, as well as multiple database searches. We perform a comprehensive review each year to assure that our HCAs are accurate.

Data Gathering
The risk analysis process involves the use of data about the pipeline, potential activities near the pipeline and potential consequences in the unlikely event of a pipeline failure. This data is needed to properly identify integrity risks and potential consequences. This data is gathered from a number of sources, including:
Original construction records Leak and incident data/reports Pipeline alignment sheet records Operating characteristics Personnel interviews Corrosion monitoring Quadrangle USGS maps Cathodic protection surveys Digital elevation models Subject matter experts Historical data One-call notices Database searches Aerial photography

Risk Assessment
Each year we perform detailed risk analysis for our entire pipeline to identify potential integrity threats to the pipeline and potential consequences in the unlikely event of a pipeline failure. This risk analysis allows us to prioritize integrity management activities, such as integrity assessments and additional prevention measures, to those pipeline segments that have higher risks. Examples of potential integrity threats include:
Excavation damage Metal loss or corrosion Defects related to pipe manufacturing process
Cracking related to exposure to natural environments Incorrect operations

The risk assessment is performed by subject matter experts using modern risk management tools and techniques to assure the risk assessment process provides an accurate determination of pipeline risks.

**Integrity Assessments**

Integrity assessments are prioritized based on the risk assessment, and are conducted to find pipeline defects well before they could become a threat. The integrity assessment method for each pipeline segment is selected based on the types of potential integrity threats applicable to that segment. The integrity assessment methods include:

**In-Line Inspection** is conducted using an inspection tool (commonly referred to as a “Smart Pig”) that is capable of identifying and classifying pipe defects, including metal loss, dents, gouges and other types of defects. The Smart Pig is inserted into the pipeline and is typically pushed by the flow of natural gas in the pipeline.

**Direct Assessment** is an assessment method that uses a systematic approach to identifying potential defects through data review, indirect assessments and targeted hands-on inspections. **Pressure Testing** is an assessment method where the pipeline is filled with an inert substance, typically water, and is tested to a pressure that is well above the normal operating pressure to validate the strength of the pipe and identifying any smaller defects long before they could become a threat.

**Response and Remediation**

Pipeline defects identified by the integrity assessments are prioritized and scheduled for field investigation and repair, if required, in accordance with the integrity management regulations and standards issued by the American Society of Mechanical Engineers, NACE International, other consensus standards and industry best practices. Spectra Energy schedules and conducts investigations and repairs for any potential defects that exceed specified thresholds. This is done regardless of whether or not the pipeline is located in a designated HCA. Any low-level defects that are not scheduled for investigation and repair will have sufficient strength and safety margin to maintain integrity at least until the next integrity assessment. This defect management approach effectively maintains the strength level and integrity of the pipeline.

**Preventive and Mitigative Measures**

Preventive measures begin with the design and construction of our pipelines. These measures include design specifications, selection of suitable construction materials, development and selection of welding procedures, pipe coatings and cathodic protection systems. Additionally, manufacturing controls are used to promote high-quality installation of the pipeline and to limit operating stress.

We also monitor the pipeline 24 hours a day from our control center. Patrolling is also performed regularly by aircraft to monitor activity near our pipeline. Further, we maintain a state-by-state partnership with the local One-Call Centers and their “Call Before You Dig” programs as well as the national “Call 811” Program.

As part of the risk assessments, integrity assessments, and other activities, we evaluate if additional preventive and mitigative measures are needed to further enhance the safety of the pipeline due to any site specific pipeline integrity concerns. We implement these site specific enhancements, as warranted, to continually improve the safety of our pipeline
Continuous Evaluation and Improvement
We continue to learn more about our pipeline system and integrity management techniques as we conduct our integrity management program. We are active participants in numerous pipeline standards and research organizations and industry groups organized to share best practices. These efforts provide us up-to-date information about improvements in integrity management tools and techniques to assure our integrity management program uses the best available tools and the best known practices.

More Information
The U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration, provides transmission pipeline operators with specific guidelines on integrity management programs. These guidelines are publically available for review. For more details on this regulation and to locate pipelines in your area you can use the internet to access www.dot.gov.

Contact Information
For general information you can write us at Spectra Energy, 5400 Westheimer Court, Houston, Texas 77056 or fax (713) 989-1519. You can also leave a message with our public awareness hotline at 888-293-7867. Your message will be routed to the appropriate person for response.
In the unlikely event of a pipeline emergency, please call 911 and our emergency telephone number at 800-231-7794.