

## **UNITIL/GRANITE STATE GAS TRANSMISSION INTEGRITY MANAGEMENT PROGRAM IMPLEMENTATION PLAN SUMMARY**

U.S. Department of Transportation (DOT) regulations at 49 CFR Part 192 Subpart O (Gas Transmission Pipeline Integrity Management) require owners and operators of gas transmission pipelines to manage the integrity of pipelines that could affect High Consequence Areas via an Integrity Management Program (IMP). The central requirement of an IMP is a written document that specifies by incorporation or reference, the processes, procedures and systems employed by an operator to implement and execute its IMP.

Unitil/Granite State Gas Transmission (Unitil/Granite) has developed an **Integrity Management Program (IMP) Implementation Plan** which provides the basis for the implementation of a comprehensive integrity management program that satisfies the DOT requirements. The following is a summary of the Unitil/Granite IMP Implementation Plan:

### **Identification of Pipeline Segments within High Consequence Areas (HCAs)**

Federal Regulations require that transmission companies like Unitil/Granite identify High Consequence Areas (HCAs), also referred to as “covered segments”. HCAs are those areas located along the pipeline that are near densely populated areas, outside areas where people congregate, or facilities occupied by persons who are confined, have impaired mobility, or would be difficult to evacuate.

HCAs are identified by one or more of the following methods:

- Reviewing available structure information regarding use and occupancy
- Reviewing available aerial photography
- Surveying field personnel
- Contacting public officials with safety or emergency response or planning responsibilities to include locations known to qualify as identified sites

### **Identification of New HCAs**

Changes to pipelines, structures and sites along the right of way and information from public officials may result in either 1) a pipeline section that was not identified as an HCA becoming a new covered segment or 2) existing HCAs being deleted from the IMP Implementation Plan.

### **Identification of Threats and Risk Assessment**

For purposes of the IMP Implementation Plan, "risk" is defined as the product of 1) the probability, or likelihood, of an event, and 2) the potential consequences of that event. The objective of risk assessment is to prioritize pipeline segments based on the relative degree to which each segment has a potential for failure due to the threats to pipeline integrity, with consideration for the potential significance of the consequences to such a failure. Threats to pipeline integrity are grouped into the following 3 categories:

1. **Time-dependent threats** such as external corrosion, internal corrosion, or stress corrosion cracking (SCC);
2. **Stable (static) threats** such as manufacturing-related defects, construction or fabrication-related defects, or equipment failures;
3. **Time-independent threats** such as third party/mechanical damage, incorrect operation or weather-related and outside force damage.

### **Development of a Baseline Integrity Assessment Plan**

Integrity Assessment plans are developed based on the results generated in Threat Identification and Risk Assessment, combined with the appropriate integrity assessment techniques allowed for each specific threat type including utilizing in-line inspections (ILI), pressure tests, direct assessments (DA), and/or other techniques.

### **Condition Remediation Strategy**

Conditions identified by the Integrity Assessment are categorized according to the appropriate response (i.e. immediate, one year, other scheduled, monitored). The selection of a repair method shall be based upon the characterization of the condition through direct examination (i.e. excavation / visual or non-destructive evaluation) and the approved method(s) for remediation of the respective condition. All repairs shall be made with materials and processes that are suitable for the pipeline operating conditions

### **Continual Evaluation and Assessment**

All integrity management processes are evaluated and covered segments are re-assessed based on data integration and associated risk assessments in a timeframe designed to ensure system integrity. Re-assessment intervals are designed to characterize potentially changing conditions of the pipeline prior to those conditions becoming hazardous. Integrity management plans, processes and procedures are reviewed and updated to incorporate lessons learned, changes in regulations and industry standards, improvements in technology and integrity management practices.

### **Preventative and Mitigative Measures**

Prevention is recognized as an important proactive element in managing certain threats. Unitil/Granite has initiated risk mitigation and damage prevention measures to address the following:

- Third Party Damage
- Outside Force Damage
- Corrosion Control
- Unintended Releases

Possible additional measures include but are not limited to, Automatic Shut-off Valves or Remote Control Valves, installing computerized monitoring and leak detection systems, replacing pipe segments with pipe of heavier wall thickness (or higher strength), providing additional training to personnel on response procedures, conducting drills with local emergency responders, increasing surveillance, increasing line marking and public awareness activities, and implementing additional inspection and maintenance programs.

### **Performance Plan and Performance Measures**

The performance of the integrity management program within covered segments is measured and reported on an annual basis for each of the following primary metrics:

- Number of miles of pipeline inspected (classified by inspection method)
- Number of repairs completed as a result of the integrity management inspection program
- Number of miles of baseline assessments and reassessments in HCA areas
- Number of leaks, failures and DOT reportable incidents (classified by cause)

These four primary metrics are reported by Unitil/Granite to DOT- PHMSA by March 15 of each year.



Performance is also measured by tracking the changes to the relative risk profile over time. Comparing annual risk assessment results to track reductions and/or increases in relative risk over time is used to monitor relative risk change, and it is the goal of the IMP Implementation Plan to reduce relative risk over time.

Additionally, Unitil/Granite tracks threat metrics for the following categories:

- External Corrosion
- Internal Corrosion
- Stress Corrosion Cracking
- Manufacturing Threat
- Construction Threat
- Equipment Threat
- Third Party Damage Threat
- Incorrect Operation Threat
- Weather Related/Outside Force Threat

#### **Quality Assurance**

Unitil/Granite employs a quality assurance plan to demonstrate compliance with this IMP Implementation Plan through documenting key steps throughout the integrity management process, ensuring that personnel involved with implementing this IMP Implementation Plan understand their responsibilities, are experienced and qualified for the work that they perform, and that formal audits/reviews of this document and its implementation are conducted.

#### **Communication**

Unitil/Granite, through the implementation of its existing plans and its Public Awareness Program, is also committed to providing information to various external stakeholder audiences on pipeline safety, damage prevention, emergency preparedness and integrity management.

#### **Environmental Impact and Safety Risk**

All baseline assessments, re-assessments and remediation activities shall be performed in accordance with Environmental Construction Standards, which are designed to minimize environmental impact. These Environmental Construction Standards constitute the minimum requirements that must be followed and may be supplemented with more stringent requirements based on specific assessment project locations and permits.

#### **More Information**

The U.S. Department of Transportation, Pipeline Hazardous Materials Safety Administration, provides transmission pipeline operators with specific guidelines on integrity management programs. These guidelines are publically available for review. Details on this regulation can be viewed at [www.phmsa.dot.gov](http://www.phmsa.dot.gov).

#### **Contact Information**

If you need a paper copy of this document, please feel free to download and print. For general information you can contact us at:

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In the unlikely event of a pipeline emergency, please call our emergency telephone number 1-800-323-4410 and call 911.