



COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA PUBLIC UTILITY COMMISSION
COMMONWEALTH KEYSTONE BUILDING
400 NORTH STREET, HARRISBURG, PA 17120

BUREAU OF
INVESTIGATION
&
ENFORCEMENT

August 28, 2019

Via Electronic Filing

Secretary Rosemary Chiavetta
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120

Re: Hazardous Liquid Public Utility Safety Standards,
Advance Notice of Proposed Rulemaking
Docket No. L-2019-3010267
I&E Safety Division Comments

Dear Secretary Chiavetta,

Enclosed please find the Bureau of Investigation and Enforcement (I&E) **Safety Division's Comments** in the above-captioned proceeding.

Should you have any questions or concerns, please do not hesitate to contact me.

Sincerely,

Richard A. Kanaskie
Director
Bureau of Investigation & Enforcement
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RAK/jfm
Enclosure

cc: Michael L. Swindler (Deputy Chief Prosecutor, PUC)

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Hazardous Liquid Public Utility :
Safety Standards, Advance Notice of : Docket No. L-2019-3010267
Proposed Rulemaking :

**COMMENTS OF
THE BUREAU OF INVESTIGATION AND ENFORCEMENT
PIPELINE SAFETY DIVISION**

The Pipeline Safety Division (Safety Division) of the Bureau of Investigation and Enforcement (I&E) of the Pennsylvania Public Utility Commission (PUC or Commission) appreciates the opportunity to comment on this Advanced Notice of Proposed Rulemaking regarding hazardous liquid public utility safety standards (Rulemaking). The purpose of this Rulemaking is to gather comments and input from interested parties in order to amend and enhance the existing body of the Commission's regulations pertaining to hazardous liquids public utilities at 52 Pa. Code Sections 59.33(b)-(c) to more comprehensively regulate the design, construction, operations and maintenance of public transporting petroleum products and other hazardous liquids under the jurisdiction of the Commission.

The recommendations of the I&E Safety Division, as set forth *infra*, are based on the experience of and the research conducted by, I&E Safety Division personnel, with the paramount objective being to ensure the safety of utilities, utility personnel and the general public throughout the Commonwealth. I&E's recommendations meet or exceed the requirements of the federal regulations in 49 CFR 195, or are recommendations that go beyond the requirements of the federal regulations.

The recommendations of the I&E Safety Division address the majority of subject areas set forth in the Rulemaking, and in the order presented therein. For ease of use, the I&E Safety Division recommendations are set forth as proposed regulations for each subject area.

A. CONSTRUCTION

1. PIPELINE MATERIAL AND SPECIFICATION

Under 195.110 - Anticipated external loads (e.g.), landslides, sinkholes, subsidence, earthquakes, vibration, thermal expansion, and contraction must be provided for in designing a pipeline system.

Under 195.114 - Miter joints in pipeline installed before July 1981 must be removed. Any miter joint discovered on a pipeline must be removed and replaced. Operators must develop a plan to identify and replace these miter joints as soon as practicable.

2. COVER OVER BURIED PIPELINES

Pipeline depth of new or altered existing pipelines shall be at least thirty-six (36) inches unless the pipeline is within fifty (50) feet of a building, in which case forty-eight (48) inches of cover is required. (49 CFR 195.210).

The company must develop a plan to address areas on existing pipelines that do not meet these requirements. The plan should be created within ninety (90) days of this rulemaking and the operator must plan to make all pipeline sections compliant within ten (10) years. The operator must address each pipeline segment on a risk-based priority.

Notwithstanding the requirements of 49 CFR 195.248(a) for cover over buried pipelines in cultivated areas, all pipe installed in areas actively cultivated for commercial farm purposes in at least two out of the last five years, as identified by the farmland operator, shall be installed with a minimum cover of forty (40) inches unless the farmland operator agrees to or requires a different depth. The operator must verify and maintain depth at least every three years.

No pipelines shall be installed under any building or structure intended for human occupancy.

3. UNDERGROUND CLEARANCES

I&E offers no specific comments at this time regarding this subject area.

4. VALVES

See comments at Section B.6, Emergency Flow Restricting Devices, on page 6, *infra*.

B. OPERATION AND MAINTENANCE

1. PIPELINE CONVERSION

Under 195.5 - A steel pipeline previously used to transport products other than those subjected to 49 CFR 195 shall require notification to the Safety Division within sixty (60) days prior to the conversion occurrence.

2. CONSTRUCTION COMPLIANCE

I&E offers no specific comments at this time regarding this subject area.

3. PRESSURE TESTING AND MAXIMUM OPERATING PRESSURE

All hazardous liquid pipelines installed before 1970 must be hydrostatically tested on an annual basis. In addition, the line must be assessed using appropriate ILI tools every two years.

Any pipeline with a leak must be re-assessed at least every year until six (6) years pass without another leak.

All hazardous liquid pipelines that transport HVLs shall be assessed at an interval not to exceed three (3) years, unless these lines were installed before 1970, in which case a one (1)-year assessment interval is required.

Under 195.452 - Pipeline Integrity Management in High Consequence Areas:
This section should be applied to all Pennsylvania assets and should treat all of Pennsylvania as a high consequence area.

Hydrostatic testing:

- a) Each new, reconstructed, relocated, replaced, or reactivated segment of pipeline must be hydrostatically tested in accordance with this section to substantiate the current or proposed maximum operating pressure. Any pipeline, or segment thereof, for which the maximum operating pressure is to be increased must also be tested in accordance with this section.
- b) Notwithstanding the requirements of 49 CFR 195.302(c), the minimum test pressure at the lowest point of the test section shall be the lesser of:
 - i) 150 percent of the maximum operating pressure; or
 - ii) the pressure that produces a pipe stress equivalent to 90 percent of the *specified minimum yield strength of the pipe*.
- c) Except as provided in subdivision (d) of this section, the test pressure must be maintained throughout the pipeline segment for at least 12 hours following stabilization.
- d) For a short segment of pipeline (100 feet or less) which is completely exposed and where its entire circumference may be readily examined visually for the detection of leaks, the test duration shall be at least four hours following stabilization and the test shall precede coating of the welds.
- e) A calibrated recording pressure gauge that indicates increments of five pounds per square inch or less shall be attached to the test section. The gauge must be calibrated at least hourly for the first and last two hours of the test. Calibration is against a dead-weight tester attached to the test section.

- f) At least five (5) business days prior to starting a test, the company shall notify the Safety Division. In order to maintain continuity of service during emergencies, shorter notice is permissible. The corporation shall also notify the officials of the municipalities wherein the test is to be conducted.

4. LINE MARKERS

Under 195.410 - Line markers shall be located at all above ground pipeline appurtenances. Additionally, line markers shall be located along the right-of-way in such a manner that two line markers, one in each direction, are visible at any point while standing at ground level on the pipeline, except in heavily developed urban areas such as downtown business centers where placement of the markers is impractical. In such urban environments, low profile markers shall be used.

5. INSPECTIONS OF PIPELINE RIGHTS-OF-WAY

Under 195.412 - This part prescribes minimum safety standards and reporting requirements for pipeline facilities used in the transportation of hazardous liquids or carbon dioxide. Each owner or operator of each intrastate hazardous liquids pipeline or pipeline facility shall comply with this section:

- a) *General.* This Section sets forth the requirements for maintenance of pipeline facilities used in the transportation of hazardous liquids or carbon dioxide.
- b) Each owner or operator shall patrol all pipeline facilities and observe and record surface conditions on and adjacent to each pipeline right-of-way for indication of leaks, overgrowth, missing line markers, construction activity and any other factor affecting safety and operation.
- c) Each owner or operator shall maintain right-of-way to have clear visibility and to provide access to the maintains crews.

- d) Inspection of rights-of-way and crossings under navigable waters:
- e) Each operator shall, at intervals not exceeding 3 weeks, but at least 26 times each calendar year, inspect the surface conditions on or adjacent to each pipeline right-of-way. Methods of inspection include walking, driving, flying or other appropriate means of traversing the right-of-way.
- f) Except for offshore pipelines, each operator shall, at intervals not exceeding 5 years, inspect each crossing under a navigable waterway to determine the condition of the crossing.
- g) In addition to the requirements prescribed in paragraph (e), the operators shall conduct walking or ground patrols:
 - i) All pipeline facilities At least 2 times a year not exceeding 6 ½ months
 - ii) High Consequences areas At least 2 times a year not exceeding 3 ½ months

6. EMERGENCY FLOW RESTRICTING DEVICES

This part prescribes the safety standards and reporting requirements for pipeline facilities used in the transportation of hazardous liquids or carbon dioxide. Each owner or operator of each intrastate hazardous liquids pipeline or pipeline facility shall comply with this rule.

- a) *General.* This Section sets forth the requirements for installing Emergency Flow Restricting Devices (EFRD) on all new pipeline installations. The lateral spacing shall not exceed 7.5 miles.

The valve locations must include

- i) At the beginning and end of each property boundaries of each school, church, hospitals, daycares, nursing facilities, commercial, and industrial facilities within the outer most area of

the buffer zone having the lowest flammability limits; and

- ii) At the beginning and end of any HCA;
- b) The EFRD requirements prescribed in paragraph (a) shall apply to those facilities in operation when any section of pipeline is removed and replaced. Those sections replaced shall meet the requirements of paragraph (a).
- c) All existing pipelines must comply with the requirements in paragraph (a) within 5 years.
- d) Records. Each owner or operator shall maintain records documenting compliance with the requirement of this section. The records shall be accessible to the Commission and its staff. These documents shall be retained for the life of the pipeline.

7. LEAK DETECTION

There are wide range of possible pipeline leak detection methods, recognizing, however, that no single leak detection method is applicable to all pipeline situations. The operator shall implement a sensor-based leak detection technology in addition to a computational method.

8. CORROSION CONTROL AND CATHODIC PROTECTION

Procedures

Each operator must have written procedures for the design, installation, operation, and maintenance of cathodic protection systems. The procedures must be specific and written for each cathodic protection test, survey, and inspection and must be carried out by, or under the direction of, a person qualified in pipeline corrosion control methods.

External corrosion control: Criteria for Cathodic protection.

Each cathodic protection system must provide a level of cathodic protection over the entire pipeline that complies with at least one or more of the following:

- a) A negative (cathodic) potential of at least 850 mV with voltage drops removed from all current sources in the pipe to soil measurement. This potential is measured with respect to a saturated copper/copper sulfate reference electrode contacting the electrolyte.
- b) A negative polarized potential of at least 850 mV relative to a saturated copper/copper sulfate reference electrode.
- c) A minimum of 100 mV of cathodic polarization between the structure surface and a stable reference electrode contacting the electrolyte. The formation or decay of polarization to satisfy this criterion and the length of time with current sources off must be based on measured soil resistivities. The length of time should not be excessive to expose areas of the pipeline and other foreign pipelines to the detrimental effects of corrosion.

External corrosion control: Adequacy of Cathodic Protection

Each cathodically-protected pipeline must be periodically tested to determine the adequacy of cathodic protection in accordance with the criteria listed in this section. Close interval potential surveys, close interval depolarization surveys or any in-line inspection technology consistent with the requirements of this section can be utilized. The method used must determine the adequacy of cathodic protection over the entire pipeline.

External corrosion control: Monitoring

- a) Each hazardous liquid pipeline that is must be tested at least once each calendar year, but with intervals not exceeding 15 months, to determine whether the cathodic protection meets the requirements of

this section. Each impressed current ground bed must be tested as part of this monitoring.

- b) Each pipeline transporting highly volatile liquids that is must be tested at least twice each calendar year, but with intervals not exceeding 7 1/2 months, to determine whether the cathodic protection meets the requirements of this section. Each impressed current ground bed must be tested as part of this monitoring.
- c) Each cathodic protection rectifier must be inspected once each calendar month but with intervals not exceeding 37 days, to ensure that it is operating properly. Remote monitoring devices are permissible to accomplish monitoring; however, physical inspection of the facilities must occur in at least six times per calendar year, in alternating calendar months, to verify the integrity of the impressed current system
- d) Each reverse current switch, each diode, and each interference bond whose failure would jeopardize structure protection on a pipeline transporting highly volatile liquids must be electrically checked for proper performance twelve times each calendar year, but with intervals not exceeding 37 days.
- e) Each operator shall initiate actions to start remedial measures within 14 days upon discovery to correct any deficiencies indicated by the monitoring. At no point shall the completion of the remedial measures exceed the next scheduled inspection.

External corrosion control: Interference Currents

- a) Each operator shall have a written continuing program to minimize the detrimental effects of stray currents from foreign pipelines, railways, mining operations, or other DC current sources. The

program shall include provisions for adequately documenting actions and activities for mitigating interference currents.

- b) Each impressed impressed current system must be designed and installed to minimize detrimental effects to foreign pipelines and other underground metallic structures.

All operators must determine and document the average and the worst-case corrosion rate experienced for each pipeline segment.

C. ADDITIONAL SUBJECT AREAS FOR PUBLIC COMMENT

1. UTILITY INTERACTION WITH LOCAL GOVERNMENT

Each pipeline operator shall establish and maintain liaison with the agencies that may be involved in an emergency response on the pipeline and shall consult with them in developing and updating the emergency procedures manual.

- a) Each pipeline operator shall take all reasonable steps to inform all persons who may be associated with an emergency response activity on the pipeline of the practices and procedures to be followed and make available to them the relevant information that is consistent with that which is specified in the emergency procedures manual.
- b) Each pipeline operator shall develop a continuing education program for the police, fire departments, medical facilities, other appropriate organizations and agencies and the public residing adjacent to the pipeline to inform them of the location of the pipeline, potential emergency situations involving the pipeline and the safety procedures to be followed in the case of an emergency.
- c) Each pipeline operator shall conduct a table-top drill semi-annually and a response drill annually, to simulate pipeline emergencies. The response drills must be conducted on different pipelines, products, and geographic areas.

2. PUBLIC AWARENESS MEETINGS

Operators shall meet with county emergency managers and lead local emergency responders at least once per quarter to discuss emergency response.

3. PA-SPECIFIC ENHANCEMENTS TO PUBLIC AWARENESS

The Public Awareness requirements apply to the affected public within Lower Flammability Limit (LFL) range of a given pipeline.

Operator shall conduct a yearly hazard assessment zone analysis and present its finding to the Local Office of Emergency Management where the facility is located through a confidentiality agreement.

4. OPERATOR QUALIFICATIONS

49 CFR Subpart G - The four-part test for operator qualifications (OQ) shall be eliminated and replaced by a two-part test. Every task performed on a new or existing pipeline facility that affect(s) the integrity of the pipeline shall be considered a covered task and shall require operator qualification credentials.

Training and evaluation must be sufficient to ensure that any individual working on a new or existing pipeline has the knowledge, skills and abilities to perform a given covered task using specific operator procedures and equipment, as well as being able to recognize and react to any abnormal operating condition(s) (AOC).

- a) Operators shall provide company and contractor personnel Operator Qualification training that provides the knowledge required to perform a covered task, using operator and facility-specific procedures and equipment. Training will also include a process that teaches workers how to identify and react to facility-specific AOCs.
- b) Operators shall evaluate the company and contractor personnel's knowledge through a documented secured written examination.

- c) Operators shall evaluate the company and contractor personnel's skills and abilities through a documented practical examination.
 - i) Practical evaluation must be accomplished through on-the-job performance while using company procedures and equipment of a covered task while being directed and observed by the Operator OQ qualified instructor.
 - ii) Operators must evaluate whether a company and contractor personnel can recognize and react to AOCs during a practical evaluation.
- d) Operators must establish requalification intervals for each covered task. Requalification is intended to ensure that company and contractor personnel are correctly performing covered tasks per company procedures. Requalification must include both training and evaluation, while using company procedures and equipment as per the initial qualification.
- e) The standards and expectations for operator qualification of operator employees and contractors are the same. Contractors shall use the same equipment and procedures as operator employees.
- f) Records shall be kept on everyone qualified for both operator employees and contractors and how the qualification was determined and who made the final determination. Identification of the covered tasks that an individual is qualified to perform and the expiration date of that qualification shall be recorded. Such records must be easily accessible by the Safety Division performing audits of covered tasks.

- g) When using Mutual Aid for emergency response an operator must review and retain records of all individual(s) intending to perform covered tasks. These individuals would need to be qualified under the OQ plan of the operator seeking mutual aid or that operator must review OQ program(s) of the companies offering mutual aid and document which procedures/covered tasks are accepted.

5. TRANSPARENCY/CSI

I&E offers no specific comments at this time regarding this subject area.

6. HDD CONSTRUCTION TECHNIQUES

This part prescribes safety standards for pipeline facilities used in the transportation of hazardous liquids or carbon dioxide. Each owner or operator of each intrastate hazardous liquids pipeline or pipeline facility using the Horizontal Directional Drilling (HDD) Trenchless Technology method for construction shall comply with this section in accordance with all PA DEP Trenchless Technology (TT) Technical Guidance.

- a) General. This Section sets forth the requirements for HDD construction requirements.
- b) Each owner or operator of each intrastate hazardous liquids pipeline or pipeline facility using the Horizontal Directional Drilling (HDD) Trenchless Technology method for construction shall provide the Safety Division the following information:
 - i) HDD design plans shall be sealed by a registered Pennsylvania Professional Engineer and Professional Geologist that includes:
 - (a) Exact location with general area map;
 - (b) Project description including pipeline ID number, size, and grade;
 - (c) Total project cost; and
 - (d) Start and completion date.

- ii) Proof of notifications to local municipality;
 - iii) Geotechnical sampling, at a minimum, every 500 feet; and
 - iv) Geotechnical report to the authority having jurisdiction.
- c) Construction. Notify the Commission and affected public 30 days prior to commencement of drilling, and again 24 hours prior to the commencement of construction.
- d) Records. Each owner or operator shall maintain records documenting compliance with the requirement of this section. The records shall be accessible to the Commission and its staff. These documents shall be retained for the life of the pipeline.

7. ACCIDENT AND INCIDENT REPORTING

52 Pa Code 59.11-- add hazardous liquid

Accident reports must also be reported to local emergency management officials.

Root Cause and Failure Analysis - Each Hazardous Liquid operator must investigate any accident to the Public Utility Commission to determine their root cause and separately the failure analysis. Both un-redacted reports must be sent to the Safety Division within 10 days of the report completion.

A root cause analysis and failure analysis must be conducted by a third-party independent laboratory, as selected by the Safety Division.

8. ADVANCED NOTIFICATION/PREAPPROVAL – MAJOR CONSTRUCTION

Major Construction/Maintenance Notification (>\$300,000/10%)

A public utility shall notify the Commission of proposed major construction, reconstruction or maintenance of plant at least 45 days prior to the commencement of work. Major construction, reconstruction or maintenance is defined for this reporting as a single project involving an expenditure in excess of \$300,000 or 10% of the cost of the

utility's plant in service, whichever is less, production well drilling to be excluded. This notification of proposed construction shall include the following:

General Information

1. Corporation name
And Operator Identification Number (OPID)
2. Pipeline route:
From
To
3. Length
4. New construction or reconstruction
5. Counties traversed
6. Municipalities traversed
7. Estimated starting date
8. Estimated completion date
9. Pipeline identification name or number
10. Flow Reversal

Pipe Specifications

1. Nominal outside diameter, D (inches)
2. Nominal wall thickness, t (inches)
3. Type and/or grade of pipe
4. Manufacturer of steel
5. Manufacturer of pipe
6. Longitudinal joint type
7. Specified minimum yield strength, SMYS (psi)
8. Nominal ultimate strength (psi)
9. Fracture toughness (minimum Charpy Energy in ft. lbs. at 20°F for buried pipe, -20°F for exposed pipe)
10. Mill test pressure (psi)
11. Is pipe new or used
12. If used pipe is employed, describe inspection and reconditioning procedures

13. Are the physical and chemical specifications of pipe to be verified by outside laboratories?

If yes, by whom?

Operating Pressure and Stress

1. Maximum operating pressure, P (psi)
2. Calculated pipe stress (hoop stress) = $PD/2t$ (psi)
3. Ratio of pipe stress to SMYS (percent)

Welding

1. Percentage of welds to be radiographed, by location
2. How will the corporation certify the radiographic technician

Railroad, Road, and Water Crossings

1. Railroad and road crossings:
Attach a list giving the location of each and indicating whether each is cased or uncased (if uncased, provide reason), and if heavier wall carrier pipe is used.
2. Lake, river, stream, or creek crossings:
Attach a list giving the location of each and describing any special construction precautions to be followed.
3. Pipeline encroachments:
Attach a list of any encroachments to railroads or roads, by location, and describe any special construction precautions to be followed.

Valves (see 49 CFR 195.260)

1. Number and spacing of manual sectionalizing valves
2. Type, make, and location of any automatic valves to be used

Minimum Cover and Clearance (see 49 CFR 195.248, 250)

If the minimum prescribed cover and/or clearance cannot be maintained, indicate the location, nature of problem, cover and/or clearance to be maintained, and any special precautions to be observed. Corrosion Control (see 49 CFR 195 Subpart H - Corrosion Control)

USGS Maps, The following maps, sketches, and drawings shall be filed with and as a part of the report of specifications:

1. Three sets of current U.S. Geological Survey Maps (7½ or 15 minute) clearly indicating the entire route of the proposed

construction or reconstruction and an area of one mile on either side of the route; and

2. Three sets of maps and design drawings showing details of the proposed construction or reconstruction.

Piping

1. Type of field coating:
2. Type of coating test:
3. Type of cathodic protection system

Pressure and Leakage Tests

1. Test pressure
2. Test medium
3. Test duration
4. Length of test section(s)

Right-of-Way

1. Has necessary right-of-way been obtained from each party having interest in the right-of-way? Provide status.
2. Have formal approval and all necessary permits been obtained from governmental agencies? Provide status.

Products Transported

Pipeline certified to transport the following liquid petroleum products:

Signature of corporation officer

Title

Date

Major Maintenance Notification (>\$50,000)

Notification for all maintenance projects with a cost greater than \$50,000. This would include maintenance, replacements and operational projects. This notification should be provided to the Safety Division at least ten (10) days prior to the commencement of such work. The notification should include:

1. Description of the work
2. Estimated start date

3. Estimated completion date
4. Line Identification and product(s)
5. Location of the project with Township, County and nearest cross street references.
6. Company contact information for project

Unplanned Replacement Notification

Immediate notification to the Safety Division for unplanned replacement of any pipeline section or cut out.

Verification Dig Notification

Ten (10)-day notification to the Safety Division of all verification digs or unearthing of suspected leaks, dents, pipe ovality features, cracks, gouges or corrosion anomalies, or any other suspected metal losses. The notification should include:

1. Description of assessment
2. Discovery method
3. Type and specification of the as-called anomaly
4. Dig date
5. Location of the anomaly with latitude and longitude coordinates
6. Feature as-called specifications

Assessment Notification

Ten (10)-day notification to the Safety Division prior to commencing with Close Interval Survey, Alternate Current Voltage Gradient (ACVG), Direct Current Voltage Gradient (DCVG), Inline Inspection runs (ILI), hydrotests or other assessment methodology. The notification should include:

1. Description of the project
2. Identification of the pipeline to be assessed

3. Location range of the area that will be assessed
4. Estimated start date
5. Estimated completion date

Drilling Notification

Thirty (30)-day notifications to the Safety Division of planned HDDs or direct drill prior to beginning the drill/installation. The notification should include:

1. Location of the proposed site
2. Proposed length, depth and pipe diameter

Incident Notification

Immediate notification (within one hour) to the Safety Division of pipeline accident, shut in, overpressure, pipeline failure, or unplanned product release. The operator should contact a member of the Safety Division. In addition to phone calls, the operator should send email notification to the Safety Division immediately.

MOP Notification

Before any liquid petroleum pipeline is placed in operation, a report shall be filed by the operator with the Safety Division certifying the maximum operating pressure to which the pipeline can operate. This notification shall also certify that the pipeline has been constructed and tested in accordance with the federal and state safety regulations.

MOP Increase Notification

The maximum operating pressure of a liquid petroleum pipeline shall not be increased without the following notifications to the Safety Division. At least ninety (90) days prior to a proposed increase in the maximum operating pressure of any liquid petroleum pipeline, the operator shall provide the following: the investigative, testing, and corrective measures (including cathodic protection, failure history, detection and repair of leaks, and specifications of pipe and other facilities) to be taken before the pressure increase is made.

Public Interest Notification

The Commission shall establish a mechanism for all new pipelines to determine, through an application, whether the pipeline operation is in the public interest.

9. ODORANT UTILIZATION

Operators shall be required to odorize all HVL pipelines in Pennsylvania. If the Commission makes this requirement voluntary, and this requirement is not implemented by the operator, the operator should be required to enhance leak detection to identify small leaks. The operator should install advanced technologies that can detect releases of these products along the pipeline. The operator's Integrity Management program must identify lack of odorization as an operational risk and the operator must implement enhancements based on risk, specifically consequence factors including population and type of buildings within the buffer zone. PHMSA has stated "Commercial odorants are added to many HVL's to assist in the detection of a leak."

10. GEOPHYSICAL TESTING AND BASELINING

Each owner or operator of each intrastate hazardous liquids pipeline or pipeline facility using the horizontal directional drilling (HDD) Trenchless Technology method for construction shall comply with all PA DEP Trenchless Technology (TT) Technical Guidance.

- A. The rule applies to those pipelines with a bore diameter 8 inches or greater, bore depth greater than 10 feet, or length greater than 250 feet.
- B. HDD design plans shall be sealed by a registered Pennsylvania Professional Engineer and Professional Geologist.
- C. All construction involving HDD construction methods shall conduct the baseline geophysics using, at a minimum, the following three techniques:
 1. Seismic;

2. Gravitational; and
 3. Electrical resistivity;
- D. Results must be of high resolution.
- E. Conduct geotechnical sampling at the locations where suspected anomalous conditions are identified through geophysics.
- Conduct post-construction geophysics, within 30-days, after pipeline installation using techniques prescribed in paragraph (a)(iii).
- F. Begin mitigation of all adverse impacts within as soon as practicable, but no later than 30-days after the identification of the impact. The operator must maintain integrity of affected pipeline facilities or take actions to mitigate risk. Such actions may include pipeline shut in, or pressure reductions and should follow 195.55-Reporting Safety Related Conditions AND ANY APPLICABLE STATE CODE.
- G. Records. Each owner or operator shall maintain records documenting compliance with the requirement of this section. The records shall be accessible to the Commission and its staff. These documents shall be retained for the life of the pipeline.

11. PROTECTION OF WATER WELLS AND SUPPLIES

Each owner or operator of intrastate hazardous liquids pipeline or pipeline facility using the horizontal directional drilling (HDD) or Trenchless Technology methods for construction shall comply with this section in accordance with all PA DEP Trenchless Technology (TT) Technical Guidance.

- A. General. This Section sets forth the construction requirements for HDD/TT construction near a private or public water supply sources such as wells or reservoirs.

1. Each owner or operator shall identify all owners of public and private water supply sources located within 450 feet of HDD/TT pipeline construction.
 2. Prior to any construction activity all owners prescribed in paragraph (i) shall be notified and provided with opportunity to have their water supplies tested before, during and post HDD/TT construction activity in accordance with water testing procedure.
- B. Pollution: In the event HDD/TT construction activity causes adverse pollution impact to the public or private water supply sources, each owner or operator shall:
1. Within 24-hour period notify PA DEP and effected water supplies owners.
 2. Take immediate action to supply effected owners prescribed in paragraph (b) with alternative clean water sources.
 3. Implement contingency plan to the satisfaction of private or public water supplies owners that addresses all impacts caused by HDD/TT construction activity including restoration or water supplies replacement.
- C. Records. Each owner or operator shall maintain records documenting compliance with the requirement of this section. The records shall be accessible to the Commission and its staff. These documents shall be retained for the life of the pipeline.

12. LAND AGENTS AND EMINENT DOMAIN

All land agents employed or contracted by any public utility must hold a valid Pennsylvania professional license in one of the following fields: Attorney,

Commonwealth of Pennsylvania Real Estate Salesperson, broker license, Professional Engineer, Professional Land Surveyor, or Professional Geologist.

13. BACKGROUND INVESTIGATIONS OF EMPLOYEES

I&E offers no specific comments at this time regarding this subject area.

14. INTEGRATION OF NEW REGULATIONS ON EXISTING FACILITIES

I&E offers no specific comments at this time regarding this subject area.