



**VECTREN**

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Energy Delivery

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June 15, 2007

Mr. Ivan Huntoon  
Director, Central Region OPS  
U.S. Department of Transportation  
Pipeline and Hazardous Safety Administration  
901 Locust Street, Suite 462  
Kansas City, MO 64106-2641

**RE: CPF No. 3-2007-5017M**

Mr. Huntoon:

Vectren Energy Delivery of Ohio (Vectren) is submitting this letter and its attachments in response to your May 21, 2007 "Notice of Amendment" (CPF No. 3-2007-5017M) that resulted from the January 29 through February 2, 2007 inspection of our facilities and records in Ohio.

In regards to items 1-3 in the letter, Vectren has modified its procedures and presents the following to address the Notice of Amendment(s).

**Item 1**

a) §195.402(e)(2) - Procedural manual for operations, maintenance, and emergencies.

**Finding:** Vectren's Emergency Response Plan does not adequately define a propane emergency.

**Response:** Emergency Response Plan, Section 1.00, page 1 has been expanded to more adequately define a propane emergency, see Exhibit A.

b) §195.402(e)(7) - Procedural manual for operations, maintenance, and emergencies.

**Finding:** Vectren's Propane Facilities Standards Manual Section 3.03 page 9 indicates that Vectren will coordinate with fire, police, and other appropriate public officials preplanned responses to emergencies but does not indicate how often these contacts will be made.

**Response:** Propane Facilities Standards Manual, Section 3.03, page 9 has been modified to state Vectren will coordinate with fire, police, and other appropriate public officials on preplanned responses to emergencies every three years, see Exhibit B.

c) §195.403(c) - Emergency Response Training.

**Finding:** Vectren's Propane Facilities Standards Manual does not state how Vectren will verify supervisor knowledge of Emergency Procedures.

**Response:** Propane Facilities Standards Manual, Section 3.03, page 1 has been modified to require Vectren supervisors to successfully complete a knowledge verification test associated with the annual emergency response training, see Exhibit C.

d) §195.442(c)(ii) - Damage Prevention Program.

**Finding:** Vectren's Propane Facilities Standards Manual does not indicate a leak survey will be conducted after blasting.

**Response:** Vectren's Operation and Maintenance Plan, Section 9.38, page 2 has been modified to include post leak survey or pressure containment test on propane pipelines after blasting, see Exhibit D.

e) §195.567(c) - Which pipelines must have test leads and what must I do to install and maintain the leads?

**Finding:** Vectren's Procedures do not state defective cathodic protection test leads will be repaired by at least the next inspection cycle.

**Response:** Propane Facilities Standards Manual, Section 3.03, page 4 has been modified to state that defective cathodic protection test leads will be repaired by the next inspection cycle, see Exhibit E.

f) §195.571- What criteria must I use to determine the adequacy of cathodic protection?

**Finding:** Vectren's Propane Facilities Standards Manual Section 3.03, page 4 references NACE RPO169 but do not specifically state that -0.850 v IR considered or 100 mv decay criteria will be used to determine the adequacy of cathodic protection.

**Response:** Propane Facilities Standards Manual, Section 3.03, page 4 has been modified to state that -0.850 v with reference to a saturated copper-copper sulfate half cell with IR considered or 100 mv decay criteria is used to determine the adequacy of cathodic protection, see Exhibit E.

g) §195.573(a)(2) - What must I do to monitor external corrosion control?

**Finding:** Vectren's Propane Pipeline Procedures do not identify the circumstances in which a close-interval survey or comparable technology is practicable and necessary to accomplish the objectives of paragraph 10.1.1.3 of NACE Standard RP0169.

**Response:** Vectren's Propane Facilities Standards Manual, Section 3.03, page 4 has been modified to identify the circumstances in which a close-interval survey or comparable technology is practicable and necessary to accomplish the objectives of paragraph 10.1.1.3 of NACE Standard RP0169, see Exhibit E.

**h) §195.573 - What must I do to monitor external corrosion control?**

**Finding:** Vectren's procedures do not indicate that cathodic protection deficiencies will be repaired by at least the next inspection cycle.

**Response:** Vectren's Propane Facilities Standards Manual, Section 3.03, page 4, has been modified to state that cathodic protection deficiencies will be repaired by the next inspection cycle, see Exhibit E.

**i) §195.575(a) - Which facilities must I electrically isolate and what inspections, tests, and safeguards are required?**

**Finding:** Vectren's Operation and Maintenance Manual does not detail the casing cathodic protection examination and mitigation program.

**Response:** Vectren's Operation and Maintenance Plan, Section 27.33, pages 2 and 3 have been modified to describe Vectren's casing cathodic protection examination and mitigation program in more detail, see Exhibits F and F.2.

**j) §195.583(c) - What must I do to monitor atmospheric corrosion control?**

**Finding:** Vectren's procedures do not indicate that atmospheric corrosion deficiencies will be repaired by next inspection cycle.

**Response:** Vectren's Propane Facilities Standards Manual, Section 3.03, page 6, has been modified to state that atmospheric corrosion deficiencies will be repaired by the next inspection cycle, see Exhibit G.

**Item 2**

**a) §195.226 Welding: Arc burns.**

**Finding:** Vectren's Welding Procedure Manual Section 3.12 Page 2 does not indicate that all arc burns are unacceptable on propane piping and must be repaired or removed.

**Response:** Welding Procedure Manual, Section 3.12, page 2 has been modified to indicate all arc burns are unacceptable on propane piping and must be repaired or removed, see Exhibit H.

**b) §195.302 General requirements.**

**Finding:** Vectren's Propane Facilities Standards Manual Section 3.02 should be expanded to include the statement "tested without leakage".

**Response:** Vectren's Propane Facilities Standards Manual, Section 3.02, page 1, has been expanded to include the statement "tested without leakage", see Exhibit I.

**c) §195.310(b)(10) – Records.**

**Finding:** Vectren's Propane Facilities Standards Manual did not specify how and where temperature measurements are recorded during a hydro-test.

**Response:** Vectren's Propane Facilities Standards Manual, Section 3.02, page 2, has been expanded to include temperature measurement specifications, see Exhibit J.

**Item 3**

**§195.505 Qualification program.**

Each operator shall have and follow a written qualification program. The program shall include provisions to:

- (a) Identify covered tasks;
- (b) Ensure through evaluation that individuals performing covered tasks are qualified;

**Finding:** Vectren's Operator Qualification Program did not ensure that personnel performing covered tasks on the propane pipeline are qualified.

Vectren's program requires amendment to ensure that all covered tasks associated with the operation of a propane pipeline are included. Since Vectren is both a natural gas supplier and a propane pipeline operator, Vectren has natural gas facilities and natural gas customers in the vicinity of the propane pipeline. As a result of responding to a public hydrocarbon odor complaint, Vectren may inadvertently utilize natural gas pipeline employees for leak response and investigation on the propane pipeline. The natural gas leak response employees are not operator qualified to recognize and respond to a propane emergency. Vectren has determined that all areas of the propane pipeline require an immediate response. Therefore, under Vectren's present system, Vectren could send an unqualified employee to a propane pipeline emergency.

**Response:** To ensure all first responder personnel are qualified to recognize and appropriately react to a propane leak, Vectren has modified its natural gas emergency response training to incorporate propane emergency response procedures. Personnel will be required to successfully complete a knowledge verification test associated with this annual emergency response training.

Please inform us if these modifications to our procedures satisfactorily address the listed inadequacies identified during the inspection.

Sincerely,



**Rick Slagle**  
**Manager Compliance**

**Attachments**

**Copy: B. Heidorn**  
**B. Doty**  
**R. Schach**  
**J. Francis**  
**J. Luttrell**  
**D. Berry**  
**D. Hodges**  
**J. Spinks**  
**J. Henry - PUCO**

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**T**HE NATURAL GAS EMERGENCY RESPONSE PLAN ("ERP" or "the Plan") is intended to provide useful information regarding emergency response and emergency reporting procedures associated with the Company's gas pipelines and related facilities. The emergency response procedures in the Plan are relative to both natural gas and propane facilities, unless specified. The criteria for regulatory reporting of natural gas incidents and safety-related conditions varies from the reporting criteria for propane accidents and safety-related conditions, therefore, separate reporting sections have been established within the Plan.

**DEFINITION OF AN EMERGENCY**

An emergency condition exists if the Company is, or may become, involved in an event which:

- is not under control by appropriate operating personnel, and
- is likely to result in personal injury or significant property damage

Note: In the case of propane, any circumstance outside of normal operating procedures should be treated as an emergency

The following are examples of events that *may* precipitate a natural gas or propane emergency:

- a gaseous atmosphere detected in or near a building
- damage to pipeline facilities or other events resulting in an unplanned, release of gas, with or without ignition
- a significant interruption of gas supply or delivery
- accidental release of gas from a pipeline facility
- a fire or explosion occurring near or directly involving a pipeline facility whereby natural gas or propane cannot be dismissed as a contributing factor
- an act-of-nature, vandalism or terrorism that threatens the safe operation of Company facilities.

**ADHERENCE TO THE PLAN**

If a **Hazard Exists to Life or Property**, it may be appropriate to implement applicable portions of the Emergency Response Plan. The Plan has three primary purposes:

1. to provide a guideline to operating personnel in the event of an operating emergency, and
2. to meet the requirements of the Department of Transportation, Code of Federal Regulations (DOT CFR) Title 49, Parts 192.615 and 195.402, which requires the Company to have such a plan, *and*
3. to ensure timely and accurate regulatory reporting and internal communications

OPERATING  
PROCEDURES**NORMAL OPERATING & MAINTENANCE  
REQUIREMENTS**

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- Include activities to advise affected municipalities, school districts, businesses, and residents of pipeline facility locations
- continued*
- Be as comprehensive as necessary to reach all areas in which the Company transports hazardous liquid (including media coverage)
  - The program must be conducted in English and in other languages commonly understood by a significant number and concentration of the non-English speaking population in the operator's area.
  - Be completed no later than June 20, 2006
  - Be available for periodic review by appropriate regulatory agencies

**PUBLIC LIAISON**

The Company will establish and maintain liaison (see *ERP Section 8.01 ["Emergency Response Public Liaison"]*) with fire, police, and other appropriate public officials to learn the responsibility and resources of each government organization that may respond to a propane or pipeline emergency, and to acquaint those agencies with the Company's ability in responding to a propane pipeline emergency and means of communication.

The Company will notify fire, police, and other appropriate public officials of propane pipeline emergencies and coordinate with them pre-planned (once every three years) and actual responses during an emergency, including the additional precautions necessary for propane emergencies.

When applicable, the Company should proactively establish liaison with public construction project and land-use officials, engineers and contractors.

**DAMAGE PREVENTION PROGRAM**

For detailed information about the Company's Damage Prevention Program, see *O&M Section 9*.

**RECORDS**

The Company will document and retain records of normal operations and maintenance activities. See *Section 5.00 ("Records Requirements")* for detailed information.

**T**HIS SECTION PROVIDES NORMAL OPERATIONS AND MAINTENANCE REQUIREMENTS for the Company's Liquid Propane (L.P.) facilities.

### GENERAL

Authorized personnel will promptly correct any condition that could adversely affect the safe operation of the propane system. If the condition presents an immediate hazard to persons or property, the propane system will not be operated.

### TRAINING

The Company will provide an ongoing training program to instruct personnel who perform normal operation and maintenance as well as emergency response activities on Company propane lines. The training will instruct authorized personnel how to:

- Carry out emergency procedures relating to their assignments
- Recognize the characteristics and hazards of propane, including, for flammable highly volatile liquid (HVL), the flammability of mixtures with air and odorless vapors
- Recognize and correct conditions likely to cause emergencies
- Predict the consequences of facility malfunctions or failures and propane spills
- Take steps necessary to control any accidental propane release and minimize the potential for fire, explosion, or environmental damage
- Safely repair facilities using appropriate special precautions, such as isolation and purging, when HVLs are involved
- Use appropriate firefighting procedures and equipment, including flash suits, by utilizing, where feasible, a simulated pipeline emergency condition

**NOTE:** When emergency rescue equipment (e.g., breathing apparatus or rescue harness and line) is required, defer to on-site emergency response agencies such as the fire department to provide the rescue service.

At intervals not exceeding 15 months, but at least once each calendar year, properly trained supervisory personnel will:

- Review with personnel their performance in meeting emergency response training program objectives
- Make appropriate changes to the training program to maintain its effectiveness

Supervisors will also periodically review work done by personnel to determine the effectiveness of normal operation and maintenance procedures, and correct deficiencies found.

To ensure compliance, supervisors are required to maintain a thorough knowledge of the procedures for which they are responsible. Supervisors will be required to participate in annual emergency response training and successfully complete the associated knowledge verification test.

OPERATING

BLASTING

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- Perform a field assessment and locate affected propane pipelines, transmission pipelines, mains, and services
- Approve or disapprove blasting with, and, if necessary, provide to the contractor, a statement of concerns, including, if appropriate, relocating pipeline facilities
- If blasting is approved, sketch pipelines on contractor's project plans.
- Perform a pre-blasting leak survey or pressure containment test on propane pipelines, transmission pipelines, mains, and services; the leak survey should extend at least 300 feet in all directions, the pressure containment test should be performed at line pressure. Repair any identified leaks prior to—or safely monitor during—blasting. Document any leak on a "Leak Case Report" (Form #3110), and repair according to classification.
- Take any additional actions necessary to ensure the integrity of the gas system:
  - Identify the location and accessibility of isolation valves
  - Where isolation valves are not available, investigate and provide other isolation means
  - When possible, reduce operating pressure or isolate the existing pipeline during blasting
  - Notify local police and fire departments, as well as the Gas Control department of the work being performed, including the date, time, and area involved in the blasting
  - Develop contingency plans, including isolation and shutdown scenarios
- Company personnel should be on-site during blasting to perform isolation, as required
- Perform a post-blasting leak survey or pressure containment test on propane pipelines, transmission pipelines, mains, and services; the leak survey should extend at least 300 feet in all directions, the pressure containment test should be performed at line pressure.

**CATHODIC PROTECTION**

Portions of the propane pipeline that have been or will be constructed, relocated, replaced, or otherwise changed, must have cathodic protection, operable not later than one year after such activity. Likewise, buried pumping station piping must also be cathodically protected. Cathodic protection requirements include the following:

- Pipelines will be designed and installed to minimize adverse effects on existing metallic structures
- Insulated joints should be protected when near electrical transmission towers, ground cables, or counterpoise; pipelines should be designed and installed to avoid insulated joints in such situations
- At least once per calendar year, but at intervals not exceeding 15 months, personnel will test each pipeline system underground facility to determine the adequacy of cathodic protection. Deficiencies found during tests will be repaired by the next inspection cycle
- Close-interval survey or similar technology may be necessary when:
  - Assessing the effectiveness of the cathodic protection
  - Locating areas with inadequate cathodic protection
  - Identifying areas with suspected stray current
  - Anytime significant changes are made to the cathodic protection system
- Test stations will be installed at sufficient intervals to determine the operational adequacy of the cathodic protection equipment or devices; these test stations should be installed as indicated on applicable engineering and operations drawings, maps and other records (see O&M 27.34: "Test Stations")
- Required cathodic protection test leads should be installed and maintained at frequent intervals to facilitate electrical measurements that will verify adequate protection. Personnel will not enclose test leads in metallic conduit. For conduit required for mechanical protection, the Company will use PVC minimum schedule 40. Personnel will repair test stations and leads if accidental damage or material defect occurs by the next inspection cycle
- Cathodic protection will comply with one or more applicable criteria and other cathodic protection considerations in NACE RP0169-2002 ("Standard Recommended Practice Control of External Corrosion on Underground or Submerged Metallic Piping Systems"), paragraphs 6.2 and 6.3 (specifically, -0.850 v with reference to a saturated copper-copper sulfate half cell with IR considered or 100 mv decay criteria will be used to determine the adequacy of cathodic protection).

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ELECTRICAL ISOLATION

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### INSULATING TRANSMISSION PIPELINES

Transmission pipelines (including the propane pipeline and underground storage field pipelines) must be cathodically protected along their entire length. Insulators on these facilities should be installed aboveground whenever possible. However, in-line belowground insulators may be installed when aboveground locations are not available.

Typical insulator locations to consider on transmission lines are primarily the same as on the distribution system (see "Insulating Distribution Mains" elsewhere in this section).

Personnel should avoid installing insulators where repairing or replacing the insulator would be difficult or impossible, including:

- Under paved areas (e.g., roads, highways, and parking lots)
- In stream beds or stream banks
- In railroad rights-of-way
- In areas where piping is abnormally deep

### INSULATING DISTRIBUTION MAINS

Cathodically protected steel distribution mains should be electrically isolated to create structures that can be easily maintained. For design purposes, the standard cathodically protected structure should consist of approximately 5,000 lineal feet of main, excluding services.

The preferred distribution main cathodic protection system is comprised of a main and/or several interconnected mains with contiguous electrical contact between the main(s) and any services branching from the main(s).

Typical insulated fitting locations to consider on distribution mains include:

- Purchase point station inlet and/or outlet piping
- Distribution regulator stations
- Either side of a buried and submerged river crossings
- Overhead bridge crossings
- Pipeline casings
- In very large structures, to break the system into smaller electrical structures (to facilitate troubleshooting the cathodically protected structures)
- Other locations (e.g., areas where stray current is a problem)

### CASINGS

Each pipeline must be electrically isolated from metallic casings that are a part of the underground system. Annually, pipe-to-soil potentials readings will be taken on both the casing pipe and carrier pipe. The delta of the two readings is calculated and if found to be

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ELECTRICAL ISOLATION

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less than 100 mv will be evaluated to determined if a short exists using one of the following methods:

- Interrupter
- Tinker & Razor
- Insulation Tester
- Panhandle Eastern Method

If found to be shorted, mitigative action may include:

- Clearing the short
- Filling the annular space with wax or other acceptable material to change the environment to be non-corrosive
- Removing the casing

#### **SERVICE LINES**

Cathodically protected metallic service lines branching off distribution mains should be electrically continuous with the distribution main if the main is cathodically protected. If the service line branches off a metallic main that is not cathodically protected, the service should be insulated from the unprotected main by installing an insulated fitting on the service at the main. Every service line should be isolated from customer fuel lines by installing an insulated fitting aboveground at the meter set, preferably at the meter outlet.

New services (farm taps) on foreign transmission lines should be isolated from the foreign line as specified by the foreign line's owner. These service lines should also be isolated from the customer fuel line at the meter set by using an appropriate insulated fitting at the meter-piping outlet.

**EXTERNAL CORROSION**

Whenever buried metallic pipe is exposed for any reason, personnel will examine it for evidence of external corrosion and complete a "Pipe Exam" (Form #3105) report (see O&M 27.30: "External and Internal Corrosion Inspection and Monitoring"). If general corrosion is found and the remaining wall thickness is less than that required for the pipeline's MOP, or local corrosion pitting might result in leakage, personnel will investigate circumferentially and longitudinally beyond the exposed portion (by visual examination, indirect method, or both) to determine whether additional corrosion requiring remedial action exists near the exposed portion.

Any pipe generally corroded so the remaining wall thickness is less than the minimum required by pipe specification tolerances will be replaced with appropriate coated pipe, or if the area is small, repaired.

Personnel will determine active corrosion areas by electrical survey or, if impractical, by other means that could include review or analysis of leak repair and inspection records, corrosion monitoring records, and the pipe environment.

**INTERNAL CORROSION**

Propane is non-corrosive. However, whenever pipe is removed, personnel will inspect the internal surface for evidence of corrosion. If the pipe is generally corroded such that the remaining wall thickness is less than the minimum required by pipe specification tolerances, personnel should inspect adjacent pipe to determine the extent of corrosion. Severely corroded pipe must be replaced.

**PITTING**

If localized/generalized corrosion pitting is found, personnel will evaluate the pipe to determine appropriate action. If localized/generalized corrosion pitting might result in leakage, the pipe must be repaired or replaced unless its strength, based on remaining wall thickness, is sufficient for the pipeline's MOP. The System Design and Planning department will determine this by using the AGA/Battelle-A Modified Criterion for Evaluating the Remaining Strength of Corroded Pipe (with RSTRENG disk).

**ATMOSPHERIC CORROSION**

Any portion of the pipeline system exposed to the atmosphere must be coated and maintained with material suitable to prevent atmospheric corrosion. At least once every 3 calendar years, but at intervals not exceeding 39 months, personnel will inspect each pipeline or portion of pipeline exposed to the atmosphere for evidence of atmospheric corrosion.

Whenever an atmospheric corrosion condition is discovered and it could adversely affect the safe operation of the pipeline system, the Company will correct it by the next inspection cycle. However, if the condition presents an immediate hazard to persons or

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REPAIRING UNACCEPTABLE WELDS

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**ARC BURNS**

Each arc burn on natural gas pipe to be operated at a pressure that produces a hoop stress of 40% or more of the Specified Minimum Yield Strength (SMYS) for that pipe material must be repaired or replaced. Each arc burn on a liquid pipeline must be repaired or removed.

Removing arc burns by grinding is permitted provided:

- Grinding removes indications of the defect; the area will be thoroughly cleaned and polished with emery cloth, and checked for complete removal of the damaged material by etching with a 20% solution of ammonium persulfate
- The repair area is blended smoothly into the surrounding area as to not create a sharp notch
- The remaining wall thickness after grinding is at least equal to the minimum thickness required by the tolerances in the specification to which the pipe is manufactured.

No pre-heating is required for arc burn repairs by grinding.

If the arc burn cannot be repaired by grinding, a cylinder of the pipe containing the entire defect must be removed.

**CALCULATION (Applicable to Natural Gas Pipelines):**

$$40\% \text{ SMYS} = \frac{.40 \times 2 \times (\text{yield strength}) \times \text{wall thickness}}{\text{Outside diameter}}$$

If the result is more than the operating pressure, the system is operating above 40% SMYS.

**CRACKS**

Welds containing cracks, regardless of location, will be rejected and cut out from the pipeline as a cylinder. No repair is permitted.

**T**HIS SECTION DESCRIBES MINIMUM PRESSURE TESTING REQUIREMENTS for steel pipelines in the Company's Liquid Propane (L.P.) systems.

#### GENERAL

The requirements in this section apply to new pipeline systems constructed with steel pipe, and for relocating, replacing or otherwise changing existing steel pipe systems. They do not apply to movement of pipeline covered by CFR 49, Part 195.424 ("Pipe Movement.").

No pipeline will be operated unless it has been appropriately pressure tested without leakage.

The Company will hydrostatically (i.e., with water) pressure test all new, replaced, relocated, or previously abandoned segments of pipelines to be placed into service, including pipe associated with tie-ins per the following requirements:

- These tests must be performed at 125% of the maximum operating pressure (MOP), or greater, for at least 4 continuous hours if being visually inspected during the test. If the pipe being tested is not being visually inspected, it must be tested an additional 4 continuous hours at a minimum of 110% of the MOP.
- Components must be tested with the piping unless it is the only item being replaced and if the manufacturer certifies that the component was factory-tested or manufactured under a quality control system that insures at least equal strength as the pipeline
- Pipe associated with tie-ins must be tested separately
- All pressure tests on any Company facility must be recorded and approved by appropriate personnel; the record (see O&M 11.90: "Records"), which must be maintained for the life of that facility, must include:
  - The pressure recording charts(s)
  - The test instrument calibration data
  - Name of the operator
  - Name of the person responsible for the test
  - Name of the test company (if any)
  - Date and time of the test
  - The minimum test pressure
  - The test medium
  - A description of the facility being tested
  - The test apparatus

OPERATING

**PRESSURE TESTING REQUIREMENTS**

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- An explanation of any pressure fluctuations or changes, including test failures that appear on the pressure recording chart
- Temperature of the test medium or pipe during the test period
- If the test section of pipe exceeds 100 feet in change of elevation, a profile of the elevation must be completed over the test section
- The temperature should be taken by affixing the temperature probe to the bottom of the pipeline which is being hydrostatically tested