
**HAZARDOUS LIQUIDS
PART 195**

**HAZARDOUS LIQUIDS TRANSMISSION
OPERATIONS AND MAINTENANCE
MANUAL**

Subpart E**Pressure Testing****§ 195.300** **Scope**

This subpart prescribes minimum requirements for pressure testing of steel pipelines. However, this subpart does not apply to movement of pipe covered by § 195.424.

§ 195.302 **General Requirements**

- (a) Except as otherwise provided in this section and in § 195.304(b), no operator may operate a pipeline unless it has been pressure tested under this subpart without leakage. In addition, no operator may return to service a segment of pipeline that has been replaced, relocated, or otherwise changed until it has been pressure tested under this subpart without leakage.
- (b) Except for pipelines converted under § 195.5, the following pipelines may be operated without pressure testing under this subpart:
 - (1) Any hazardous liquid pipeline whose maximum operating pressure is established under § 195.406(a)(5) that is-

Approved: Signature on file Date:
Manager, Safety, Health, and Environmental

Approved: Signature on file Date:
Environmental Manager

**HAZARDOUS LIQUIDS
PART 195****HAZARDOUS LIQUIDS TRANSMISSION
OPERATIONS AND MAINTENANCE
MANUAL**

- (i) An interstate pipeline constructed before January 8, 1971;
 - (ii) An interstate offshore gathering line constructed before August 1, 1977;
 - (iii) An intrastate pipeline constructed before October 21, 1985; or
 - (iv) A low-stress pipeline constructed before August 11, 1994 that transports HVL.
 - (2) Any carbon dioxide pipeline constructed before July 12, 1991, that-
 - (i) Has its maximum operating pressure established under § 195.406(a)(5); or
 - (ii) Is located in a rural area as part of a production field distribution system.
 - (3) Any low-stress pipeline constructed before August 11, 1994 that does not transport HVL.
- (c) Except for pipelines that transport HVL onshore and low-stress pipelines, the following compliance deadlines apply to pipelines under paragraphs (b)(1) and (b)(2)(i) of this section that have not been pressure tested under this subpart:
- (1) Before December 7, 1995, for each pipeline each operator shall-
 - (i) Plan and schedule testing according to this paragraph; or
 - (ii) Establish the pipeline's maximum operating pressure under § 195.406(a)(5);
 - (2) For pipelines scheduled for testing, each operator shall-

**HAZARDOUS LIQUIDS
PART 195**

**HAZARDOUS LIQUIDS TRANSMISSION
OPERATIONS AND MAINTENANCE
MANUAL**

- (i) Before December 7, 1998, pressure test-
 - (A) Each pipeline identified by name, symbol, or otherwise that existing records show contains more than 50 percent by mileage of electric resistance welded pipe manufactured before 1970; and
 - (B) At least 50 percent of the mileage of all other pipelines; and
- (ii) Before December 7, 2001, pressure test the remainder of the pipeline mileage.

ESI RESPONSE to § 195.302:

All DOT regulated liquid piping systems regardless of stress, shall be tested after construction. Systems to be operated at a hoop stress greater than 20% SMYS shall be pressure tested to 1.25 times the design pressure. Hydrotest pressure shall be maintained for four (4) hours. API RP 1110 may be used for guidance in pressure testing. Tests will be made upon the completed system and upon component parts of the finished system. Should leaks occur on tests, the line section or component part shall be repaired or replaced and retested in accordance with ESI's "Hazardous Liquid Pipelines Plant Engineering Specification" Section 9.2 Testing, and ASME/ANSI B31.4.

ProceduresPressure Testing Procedure Guide**Location Filed**Inspection Dept.**Documentation**

RKGP

Pre-DOT Construction/Maint. Records A-1

RKGP

Post-DOT Construction/Repair Records A-2

RKGP

Location FiledDOT FilesDOT Files

**HAZARDOUS LIQUIDS
PART 195**

**HAZARDOUS LIQUIDS TRANSMISSION
OPERATIONS AND MAINTENANCE
MANUAL**

Systems Pressure Tests RecordsE-4DOT Files**§ 195.303 Test Pressure**

The test pressure for each pressure test conducted under this subpart must be maintained throughout the part of the system being tested for at least 4 continuous hours at a pressure equal to 125 percent, or more, of the maximum operating pressure and, in the case of a pipeline that is not visually inspected for leakage during the test, for at least an additional 4 continuous hours at a pressure equal to 110 percent, or more, of the maximum operating pressure.

ESI RESPONSE to § 195.303:

All regulated liquid transportation piping systems within ESI regardless of stress, shall be tested after construction.

Systems to be operated at a hoop stress greater than 20% SMYS shall be pressure tested to 1.25 times the design pressure. Hydrotest pressure shall be maintained for four (4) hours. API RP 1110 may be used for guidance in hydrotesting.

Leak testing in lieu of hydrotest for pipelines operating at less than 20% SMYS is not recommended. This alternative is approved by paragraph 437.1.2(a)(3), ASME/ANSI B31.4.

When testing piping, the test pressure shall not exceed that stipulated in the standards of materials specifications (except pipe) incorporated in this specification by reference and listed in Table 423.1, Materials Standards, ASME/ANSI B31.4 for the weakest element in the system, or portion of system, being tested.

Documentation**Location Filed**

RKGP

Pre-DOT Construction/Maint. Records A-1DOT Files

RKGP

Post-DOT Construction/Repair Records A-2DOT Files

RKGP

**HAZARDOUS LIQUIDS
PART 195**

**HAZARDOUS LIQUIDS TRANSMISSION
OPERATIONS AND MAINTENANCE
MANUAL**

**§ 195.304 Systems Pressure Tests Records
Testing of Components**E-4DOT Files

- (a) Each pressure test under § 195.302 must test all pipe and attached fittings, including components, unless otherwise permitted by paragraph (b) of this section.
- (b) A component, other than pipe, that is the only item being replaced or added to the pipeline system need not be hydrostatically tested under paragraph (a) of this section if the manufacturer certifies that either--
 - (1) The component was hydrostatically tested at the factory; or
 - (2) The component was manufactured under a quality control system that ensures each component is at least equal in strength to a prototype that was hydrostatically tested at the factory.

ESI RESPONSE to § 195.304:

Fabricated items such as scraper traps, manifolds, volume chambers, etc. shall be hydrostatically tested to limits equal to or greater than those required of the completed system. This test may be conducted separately or as a part of the completed system.

In testing fabricated items before installation, the applicable paragraphs of specifications listed in Table 423.1, Materials Standards, ASME/ANSI B31.4 shall apply.

If visual inspection is possible for all pressurized piping component during the four hour test and there is no leakage, these piping components require no further testing.

On those portions of piping systems where visual inspection is not possible during hydrotest, the proof test shall be followed by a reduced leak test equivalent to 1.25 times the internal design pressure for at least four (4) hours.

**HAZARDOUS LIQUIDS
PART 195**

**HAZARDOUS LIQUIDS TRANSMISSION
OPERATIONS AND MAINTENANCE
MANUAL**

Documentation**Location Filed**

RKGP

Pre-DOT Construction/Maint. Records A-1DOT Files

RKGP

Post-DOT Construction/Repair Records A-2DOT Files

RKGP

Systems Pressure Tests Records E-4DOT Files**§ 195.306 Test Medium**

- (a) Except as provided in paragraphs (b),(c) and (d) of this section, water must be used as the test medium.
- (b) Except for offshore pipelines, liquid petroleum that does not vaporize rapidly may be used as the test medium if--
- (1) The entire pipeline section under test is outside of cities and other populated areas;
 - (2) Each building within 300 feet of the test section is unoccupied while the test pressure is equal to or greater than a pressure which produces a hoop stress of 50 percent of specified minimum yield strength;
 - (3) The test section is kept under surveillance by regular patrols during the test; and
 - (4) Continuous communication is maintained along entire test section.
- (c) Carbon dioxide pipelines may use inert gas or carbon dioxide as the test medium if-
- (1) The entire pipeline section under test is outside of cities and other populated areas;

**HAZARDOUS LIQUIDS
PART 195**

**HAZARDOUS LIQUIDS TRANSMISSION
OPERATIONS AND MAINTENANCE
MANUAL**

- (2) Each building within 300 feet of the test section is unoccupied while the test pressure is equal to or greater than a pressure that produces a hoop stress of 50 percent of specified minimum yield strength;
 - (3) The maximum hoop stress during the test does not exceed 80 percent of specified minimum yield strength;
 - (4) Continuous communication is maintained along entire test section; and
 - (5) The pipe involved is new pipe having a longitudinal joint factor of 1.00.
- (d) Air or inert gas may be used as the test medium in low-stress pipelines.

ESI RESPONSE to § 195.306:

Hydrostatic tests shall be conducted with water. Liquid petroleum that does not vaporize may be used if the following conditions are met:

- **The pipeline section under test is outside populated areas.**
- **Each building within 300 feet (90m) of the test section is unoccupied while the test pressure is equal to or greater than a pressure which produces a hoop stress of 50% SMYS.**
- **The test section is kept under surveillance by regular patrols during test.**
- **Communications is maintained along the test section.**
- **Provisions shall be made for relief of excess pressure, if the testing medium will be subject to thermal expansion during the test. Effects of temperature changes shall be taken into account when interpretations are made of the recorded test pressure.**

**HAZARDOUS LIQUIDS
PART 195**

**HAZARDOUS LIQUIDS TRANSMISSION
OPERATIONS AND MAINTENANCE
MANUAL**

<u>Documentation</u>	<u>Location Filed</u>
RKGP <u>Pre-DOT Construction/Maint. Records A-1</u>	<u>DOT Files</u>
RKGP <u>Post-DOT Construction/Repair Records A-2</u>	<u>DOT Files</u>
RKGP <u>Systems Pressure Tests Records E-4</u>	<u>DOT Files</u>

§ 195.308 Testing of Tie-Ins

Pipe associated with tie-ins must be hydrostatically tested, either with the section to be tied in or separately.

ESI RESPONSE to § 195.308:

ESI shall comply with § 195.308. Radiography or other non-destructive testing methods may be used in lieu of hydrotesting to test tie-in welds.

<u>Documentation</u>	<u>Location Filed</u>
RKGP <u>Pre-DOT Construction/Maint. Records A-1</u>	<u>DOT Files</u>
RKGP <u>Post-DOT Construction/Repair Records A-2</u>	<u>DOT Files</u>
RKGP <u>Systems Pressure Tests Records E-4</u>	<u>DOT Files</u>

§ 195.310 Records

- (a) A record must be made of each pressure test required by this subpart, and the record of the latest test must be retained as long as the facility tested is in use.
- (b) The record required by paragraph (a) of this section must include:
 - (1) The pressure recording charts;

**HAZARDOUS LIQUIDS
PART 195****HAZARDOUS LIQUIDS TRANSMISSION
OPERATIONS AND MAINTENANCE
MANUAL**

- (2) Test instrument calibration data;
- (3) The name of the operator, the name of the person responsible for making the test, and the name of the test company used, if any;
- (4) The date and time of the test;
- (5) The minimum test pressure;
- (6) The test medium;
- (7) A description of the facility tested and the test apparatus;
- (8) An explanation of any pressure discontinuities, including test failures, that appear on the pressure recording charts; and
- (9) Where elevation differences in the section under test exceed 100 feet, a profile of the pipeline that shows the elevation and test sites over the entire length of the test section.

ESI RESPONSE to § 195.310:

ESI shall maintain records showing the hydrotest procedures and the data developed in establishing its MAOP. A record relative to design, construction, and testing of each pipeline shall be maintained. These records shall include:

- **Material specifications.**
- **Route maps and alignment sheets for “as-built” condition.**
- **Location of each pipe size, grade, wall thickness, type of seam (if any), and manufacturer.**
- **Coatings and cathodic protection**
- **Pressure test records as required by § 195.310.**
- **All pipeline breaks**
- **All leaks and repairs**

**HAZARDOUS LIQUIDS
PART 195**

**HAZARDOUS LIQUIDS TRANSMISSION
OPERATIONS AND MAINTENANCE
MANUAL**

These records shall be maintained for the life of the facility.

Documentation**Location Filed**

RKGP

Pre-DOT Construction/Maint. Records A-1DOT Files

RKGP

Post-DOT Construction/Repair Records A-2DOT Files

RKGP

Systems Pressure Tests Records E-4DOT Files