
**HAZARDOUS LIQUIDS
PART 195**

**HAZARDOUS LIQUIDS TRANSMISSION
OPERATIONS AND MAINTENANCE
MANUAL**

Subpart D**Construction****§ 195.200 Scope**

This subpart prescribes minimum requirements for constructing new pipeline systems with steel pipe, and for relocating, replacing, or otherwise changing existing pipeline systems that are constructed with steel pipe. However, this subpart does not apply to the movement of pipe covered by § 195.424.

§ 195.202 Compliance with Specifications or Standards

Each pipeline system must be constructed in accordance with comprehensive written specifications or standards that are consistent with the requirements of this part.

ESI RESPONSE to § 195.202:

Each pipeline system will be constructed in accordance with ESI's "Hazardous Liquid Pipelines Plant Engineering Specification", complete construction specifications which include ASME/ANSI B31.4 and 49CFR195. The construction

Approved: _____ Date: _____
Manager, Safety, Health, and Environmental

Approved: _____ Date: _____
Environmental Manager

specifications shall cover all phases of the work and shall be in sufficient detail to cover the requirements in the above codes. Construction specifications shall include, but are not limited to, specific details on handling pipe, equipment, materials, welding, and all construction factors which contribute to safety and sound engineering practice.

§ 195.204 Inspection - General

Inspection must be provided to ensure the installation of pipe or pipeline systems in accordance with the requirements of this subpart. No person may be used to perform inspections unless that person has been trained and is qualified in the phase of construction he is to inspect.

ESI RESPONSE to § 195.204:

ESI will provide complete inspection coverage for all pipeline construction and maintenance projects.

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- Inspectors will be qualified by both experience and training.
- Minimum qualifications for inspectors shall be the same qualifications as API 570, “Inspection, Repair, Alteration, and Rerating of In-Service Systems”. See section 8.1.3 of ESI’s “Hazardous Liquid Pipelines Plant Engineering Specification” for requirements.

§ 195.206 **Material Inspection**

The pipe or other component may be installed in a pipeline system unless it has been visually inspected at the site of installation to ensure that it is not damaged in a manner that could impact its strength or reduce its serviceability.

ESI RESPONSE to § 195.206:

Fabricated items such as scraper traps, manifolds, pressure vessels, etc. shall be inspected before assembly in the mainline or manifold. Defects shall be repaired in accordance with provisions of the standard or specification applicable to manufacturer. Pipe shall be inspected before coating and before assembly into the mainline or manifold. Refer to Section 8 Construction, Assembly, and Fabrication and Section 9.1.3 Type and Extent of Examination in ESI’s “Hazardous Liquid Pipelines Plant Engineering Specification” for detailed information.

Documentation
ESICP
Inspection/Qualification Records - C-3
DOT File

§ 195.208 **Welding of Supports and Braces**

Supports or braces may not be welded directly to pipe that will be operated at a pressure of more than 500 p.s.i.g.

ESI RESPONSE to § 195.208:

If the pipe is designed to operate at or close to its allowable stress, all connections welded to the pipe shall be made to a separate cylindrical member which completely encircles the pipe. The encircling member shall be welded to the pipe by continuous circumferential welds. Applicable sections of MSS SP-58 (materials and design of pipe hangers and supports) and MSS SP-69 (selection and application of pipe hangers and supports) may be used. See section 7.12 Design of Pipe Supporting Elements of ESI’s “Hazardous Liquid Pipelines Plant Engineering Specification”.

Documentation
ESICP
Inspection/Qualification Records - A-1
Inspection/Qualification Records - A-2
Inspection/Qualification Records - A-3
DOT File

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Employee Qualification Records C-3

DOT File

§ 195.210**Pipeline Location**

(a)

Pipeline right-of-way must be selected to avoid, as far as practicable, areas containing private dwellings, industrial buildings, and places of public assembly.

(b)

No pipeline may be located within 50 feet of any private dwelling or any industrial building or place of public assembly to which persons work, congregate, or assemble, unless it is provided with at least 12 inches of cover in addition to that prescribed in § 195.248.

ESI RESPONSE to § 195.210:

Safety of the general public and the prevention of damage to the pipeline by reason if its location are primary considerations. Right-of-way objectives include minimizing the possibility of hazard from future industrial and urban development or encroachment of the right-of-way, combine right-of-way considerations with route selection to minimize present environmental and physical concerns. For pipelines that may be located within 50 feet of any private dwelling, or any industrial building or place of assembly an additional 12 inches of cover will be added as prescribed in § 195.248.

ESOP
ESOP Construction/Repair Records A-1
ESOP
ESOP Construction/Repair Records A-2
ESOP
ESOP Construction/Repair Records A-3
ESOP
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Employee Qualification Records C-3

Documentation

DOT File
DOT File
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DOT File
DOT File
DOT File

Employee Qualification

§ 195.212**Bending of Pipe**

(a)

Pipe must not have a variable bend.

(b)

Each field bend must comply with the following:

(1)

A bend must not impair the strength of the pipe.

(2)

Each bend must have a smooth, rounded end free from buckling, cracks, or any other mechanical damage.

(3)

On a pipe containing a longitudinal weld, the longitudinal weld must be as near as practicable to the neutral axis of the bend unless--

(i)

The bend is made with an internal bending mandrel; or

(ii)

The pipe is 12 inches or less in outside diameter or has a diameter to wall thickness ratio less than 70.

(c)

Each circumferential weld which is located where the pipe during bending causes a permanent deformation to the pipe must be nondestructively tested either before or after the bending process.

ESI RESPONSE to § 195.212:

Wrinkle and miter bends are not allowed on ESI pipelines. Changes in direction and elevation may be made by use of bends and elbows. Design requirements for bends and elbows are provided in Section 7 Design and Section 8.1.8 Bends, Elbows, and Miters in Steel Pipelines in ESI's "Hazardous Liquid Pipelines Plant Engineering Specification".

ESOP
ESOP Construction/Repair Records A-1
ESOP
ESOP Construction/Repair Records A-2
ESOP
ESOP Construction/Repair Records A-3
ESOP
Employee Qualification Records C-3

Documentation

DOT File
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Employee Qualification

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(a)

Welding must be performed by a qualified welder in accordance with welding procedures qualified to produce welds meeting the requirements of this subpart. The quality of the test welds used to qualify the procedure shall be determined by destructive testing.

(b)

Each welding procedure must be recorded in detail, including the results of the qualifying tests. This record must be retained and followed whenever the procedure is used.

ESI RESPONSE to § 195.214:

Welding requirements; general, preparation for welding, welding qualifications, qualification records, preheating, stress relieving, etc. are provided in Section 6 Welding and Section 9 Inspection and Testing of ESI's "Hazardous Liquid Pipelines Plant Engineering Specification".

Welding Procedure Guide

Procedures

View Inspection Data

Locations Filed

WPS
 WPS DOT CommodityMain Records - A-1
 WPS
 WPS DOT CommodityMain Records - A-2
 WPS
 WPS DOT CommodityMain Records - A-3

Documentation

DOT File
 DOT File
 DOT File

Locations Filed

§ 195.216 **Welding: Miter Joints**

A miter joint is not permitted (not including deflection up to 5 degrees that are caused by misalignment).

ESI RESPONSE to § 195.216:

WRINKLE BENDS AND MITER JOINTS ARE NOT ON ESI's DOT REGULATED PIPELINES.

§ 195.222 **Welders: Qualification of Welders**

Each welder must be qualified in accordance with Section 3 of API Standard 1104 or Section IX of the ASME Boiler and Pressure Vessel Code, except that a welder qualified under an earlier edition than listed in § 195.3 may weld but may not re-qualify under that earlier edition.

ESI RESPONSE to § 195.216:

A Welding Procedure Specification (WPS) shall be prepared and qualified by testing prior to field welding in order to demonstrate that welds having suitable mechanical properties can be continuously made. Welding procedures and each welder or welding operator shall be qualified under API 1104, or Section IX of the ASME Boiler and Pressure Vessel Code, whichever is appropriate for the type of welding to be performed.

Welder re-qualification tests are required in the following instances:

- (a) All welders must be requalified at least once per year.

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- (b) Welder has not worked in a given process of welding for a period of 6 months or more.
- (c) There is some reason to question a welder's ability.

WELP
Welding Qualification Records - C-3

Documentation

DOT File

Location File

§ 195.224 Welding: Weather

Welding must be protected from weather conditions that would impair the quality of the completed weld.

ESI RESPONSE to § 195.224:

Welding on ESI pipelines will not be initiated or continued if the following weather conditions occur during welding operations:

- (1) Steady wind speed of 20 mph without adequate shelter.
- (2) Steady wind speed of 20 mph or more with gusts greater than 40 mph.
- (3) Condensation including rain, fog, hail, without adequate shelter.

WELP
Welding Qualification Records - A-1
WELP
Welding Qualification Records - A-2
WELP
Welding Qualification Records - C-3

Documentation

DOT File
DOT File
DOT File

Location File

§ 195.226 Welding: Arc Burns

(a) Such arc burn shall be repaired.

(b) An arc burn may be repaired by completely removing the weld metal, grinding the pipe to manufacturer's specification, if a notch is not repairable by grinding, a notch may be welded in the pipe as long as it is not welded.

(c) A ground may be welded in the pipe as long as it is not welded.

grinding, if the grinding does not reduce the remaining wall thickness to less than the minimum thickness required.

ESI RESPONSE to § 195.226:

Welding defects shall be repaired in accordance with paragraph 434.8.7, Repair or Removal of Defects, ASME/ANSI B31.4 and Section 6 Welding of ESI's "Hazardous Liquid Pipelines Plant Engineering Specification".

WELP
Welding Qualification Records - A-1
WELP
Welding Qualification Records - A-2
WELP
Welding Qualification Records - C-3

Documentation

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Location File

**HAZARDOUS LIQUIDS
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(a) Each weld and welding must be inspected to insure compliance with the requirements of this subpart. Visual inspection must be supplemented by nondestructive testing.

(b) The acceptability of a weld is determined according to the standards in Section 6 of API Standard 1104. However, if a girth weld is unacceptable under these standards for a reason other than a crack, and if the Appendix to API Standard 1104 applies to the weld, the acceptability of the weld may be determined under that appendix.

ESI RESPONSE to § 195.228:

ESI will reference API Standard 1104, Section 6-Acceptance standards for Nondestructive Testing and ASME BPV Code, Section V as the governing specifications for inspection of Company Welding Operations. However, ESI reserves the right to use ASME B31.3 Standards for Non-Destructive testing on DOT regulated pipelines. For work to be performed inside ESI or Conoco Battery limits, the more stringent Standard of ASME B31.3 shall be used. See Section 6 Welding and Section 9 Inspection and Testing in ESI's "Hazardous Liquid Pipelines Plant Engineering Specification".

Document
DOT File
DOT File
DOT File
DOT File

§ 195.230 Welds: Repair or Removal of Defects

(a) Each weld that is unacceptable under § 195.228 must be repaired or replaced. Except for cracks in an offshore pipeline being installed from a pipeline vessel, a weld must be repaired if it has a crack that is more than 8 percent of the weld length.

(b) Each weld that is repaired must have the defect removed, then be re-inspected and the repair to be performed if conditions exist which would adversely affect the integrity of the weld repair. After repair, the segment of the weld that was repaired must be inspected to ensure its acceptability.

(c) Repair of a crack, or of any defect in a previously repaired area must be in accordance with written weld repair procedures that have been available under § 195.214. Repair procedures must provide that the minimum mechanical properties specified for the welding procedures used to make the original weld are met upon completion of the final weld repair.

ESI RESPONSE to § 195.230:

Reference ESI's Welding and NDT Procedures. Copies of records should be sent to the Environmental Department to be filed in the DOT Pipeline Files. See Section 6.0 Welding and 9 Inspection and Testing in ESI's "Hazardous Liquid Pipelines Plant Engineering Specification".

Nondestructive testing:

All replacement pipe will be pressure-tested to the requirements for a new line installed in the same location. If the pressure test is made prior to installation, then all field girth butt welds that were not strength tested must be tested after installation by nondestructive tests meeting the requirements under DOT § 195.234. Upon requirements of non-destructive testing, each operator must retain for the life of the pipeline, a record showing by milepost, engineering station, or by geographic feature, the number of girth welds made, the number nondestructively tested, the number rejected, and the disposition of the rejects.

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Company Welding Procedures prohibit more than one (1) attempt to repair a crack and more than two (2) attempts to repair unacceptable indications of other types.

ESI RESPONSE to § 195.234:

Nondestructive testing:

All replacement pipe will be pressure-tested to the requirements for a new line installed in the same location. If the pressure test is made prior to installation, then all field girth butt welds that were not strength tested must be tested after installation by nondestructive tests

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meeting the requirements under DOT § 195.234. Upon requirements of non-destructive testing, each operator must retain for the life of the pipeline, a record showing by milepost, engineering station, or by geographic feature, the number of girth welds made, the number nondestructively tested, the number rejected, and the disposition of the rejects.

Radiography and visual examination are the preferred methods for nondestructive testing of pipeline welds. Ultrasonic, magnetic particle, and liquid penetrant testing methods can be used in selected cases. All inspectors, contractor or Company, must be certified to ASNT (1984 edition) TC-1A Level II in the examination method for weld acceptance. See 6.0 Welding and Section 9 Inspection and Testing in ESI's "Hazardous Liquid Pipelines Plant Engineering Specification".

Nondestructive testing of welds on ESI liquid transmission pipelines will be performed by contractor or Company personnel who have been tested and certified to the requirements in SNT Recommended Practice No. TC-1A, "Nondestructive Examinations".

Radiographic procedures shall, at a minimum, meet the requirements in API 1104. Acceptability standards are given in API 1104. At the project manager's discretion, ASME B31.3 may be used as a NDT Standard for DOT regulated Piping. Each weld must meet these standards or must be removed and/or repaired. Reference ESI's "Hazardous Liquid Pipelines Engineering Plant Specification" section 6.0 Welding and Section 9 Inspection and Testing.

Non-destructive examination procedure and acceptance criteria are in the Central Engineering Department NDT Standards. Contractor Procedures are reviewed and approved by the Company's Level III certified Inspector. Contract NDT III Procedures must be approved by the Contractor Company's Level III inspector.

At pipeline tie-in's, 100% radiography can be conducted in lieu of hydrotest. Acceptability standards remain the same and the procedure must be approved by the Technology Manager or the Project Engineering Manager.

Procedure**Location Filed****Documentation****Location Filed**

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ESGP
ESGP Corrosion/Protective Coatings - A-1
ESGP
ESGP Corrosion/Protective Coatings - A-2
ESGP
Employee Qualification Records - C-4

DOT File
DOT File
DOT File
DOT File

§ 195.236 External Corrosion Protection

Each component in the pipeline system must be provided with protection against external corrosion.

ESI RESPONSE to § 195.236:

External and internal corrosion control shall be completed as required in Chapter VIII, Corrosion Control, ASME/ANSI B31.4, ESI's Plant Corrosion Control & Monitoring Engineering Specifications, Hazardous Liquid Pipelines Plant Engineering Specifications, Company Engineering Specifications and DOT 49CFR195.

Documentation

Location Filed

ESGP
ESGP Corrosion/Protective Coatings - A-1
ESGP
ESGP Corrosion/Protective Coatings - A-2
ESGP
Employee Qualification Records - C-4

DOT File
DOT File
DOT File
DOT File

§ 195.238 External Coating

- (a) No pipeline system component may be buried or submerged unless that component has an external protective coating that—
- (1) Is designed to mitigate corrosion of the buried or submerged component;
 - (2) Has sufficient adhesion to the metal surface to prevent underfilm migration of moisture;
 - (3) Is sufficiently durable to resist cracking;
 - (4) Has enough strength to resist damage due to handling and soil stress; and
 - (5) Supports any supplemental cathodic protection.
- In addition, if any insulating-type coating is used it must have low moisture absorption and provide high electrical resistance.
- (b) All pipe coating must be inspected just prior to inserting the pipe into the ditch or submerging the pipe, and any damage discovered must be repaired.

ESI RESPONSE to § 195.238:

All new buried pipe sections shall be coated. Coating systems reduce the amount of current required to protect buried pipes. Coating systems should be one of the following types:

1. Fusion bonded epoxy
2. Coal tar epoxy
3. Polyolefin tape
4. Prefabricated Films

All pipe and components will be visually inspected prior to coating. Any defects/irregularities will be removed prior to coating.

When the pipe/component is coated inspection shall be made to determine that the coating machine does not cause harmful gouges or grooves in the surface. Lacerations of the coating shall be inspected prior to repair of coating to see if the pipe surface has been

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damaged. Damaged coating and pipe shall be repaired before the pipe is lowered in the ditch. All repairs, changes, replacements shall be inspected before they are covered up.

The condition of the ditch shall be inspected prior to laying the pipe to assure proper protection of pipe and coating. Reference Section 9 Inspection and Testing of ESI's "Hazardous Liquid Pipelines Plant Engineering Specification" and ESI's "Corrosion Control and Monitoring Plant Engineering Specification".

DocumentationLocation Filed

BSLCP
Hazardous Liquid Pipelines, Research... A-4
BSLCP
Hazardous Liquid Pipelines, Research... A-2
BSLCP
Hazardous Liquid Pipelines, Research... C-3

DOT File
DOT File
DOT File

§ 195.242 Cathodic Protection System

(a) A cathodic protection system must be installed for all buried or submerged facilities to mitigate corrosion that might result in structural failure. A test procedure must be developed to determine whether adequate cathodic protection has been achieved.

(b) A cathodic protection system must be installed not later than 1 year after completing the construction.

ESI RESPONSE to § 195.242:

The level of cathodic protection provided will be such that a negative voltage of at least 0.85 volts, with reference to a saturated copper-copper sulfate half cell exists. The amount of protection must be controlled so as not to damage the protective coating or the pipe.

Tests to determine the amount of cathodic protection current required in the field prior to actual installation of cathodic protection is necessary providing prior experience and test data is not available to estimate cathodic protection current requirements, resistivity, and corrosion interference problems to be expected. Reference Standard 38, NACE STD. RP-01-69.

All new buried pipe installed will be coated and cathodically protected as part of the construction project. Cathodic Protection system will be commissioned *prior to acceptance of the pipeline.*

DocumentationLocation Filed

BSLCP
Hazardous Liquid Pipelines, Research... A-4
BSLCP
Hazardous Liquid Pipelines, Research... A-2
BSLCP
Hazardous Liquid Pipelines, Research... C-3
BSLCP
Hazardous Liquid Pipelines, Research... D-4
BSLCP
Hazardous Liquid Pipelines, Research... D-3
BSLCP
Hazardous Liquid Pipelines, Research... D-4
BSLCP
Hazardous Liquid Pipelines, Research... D-3

DOT File
DOT File
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DOT File
DOT File
DOT File
DOT File
DOT File

§ 195.244 Test Leads

(a) Except for offshore pipelines, electrical test leads used for corrosion control or electrochemical testing must be installed at intervals frequent enough to obtain electrical measurements indicating the adequacy of the cathodic protection.

(b) Test leads must be installed as follows:

- (1) Enough looping or slack must be provided to prevent test leads from being unduly stressed or broken during backfilling.
- (2) Each lead must be attached to the pipe so as to prevent stress concentration on the pipe.
- (3) Each lead installed in a conduit must be suitably insulated from the conduit.

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Each test lead wire will be connected to the pipeline so as to remain mechanically secure and electrically conductive while minimizing stress concentration on the pipe.

Each bared test lead wire and bared metallic area at point of connection to the pipeline will be coated with an electrical insulating material compatible with the pipe coating and the insulation on the wire. NOTE: Place approximately 1 mile apart and locations must be shown on drawings.

§ 195.246 Installation of Pipe in a Ditch

- (b) Except for pipe in the Gulf of Mexico and its waters, all offshore pipe in water at least 37 m (12 ft) deep but not more than 61 m (200 ft) deep, as measured from the mean low tide, must be installed so that the top of the pipe is below the natural bottom unless the pipe is supported by stanchions, held in place by anchors or heavy concrete caissons, or secured by, or attached to, natural bottom.

Lowering of the pipe into the ditch shall be permitted only when a ESI Pipeline Inspector is on location. Special emphasis will be placed on pipe condition before and after lowering, and the overall condition of the ditch.

Stresses induced in the pipe during construction must be minimized. Pipe shall lay in the ditch with minimum application of outside sources. Reference Section 8.1.7 Ditching, 8.1.11 Installation of Pipe in Ditch, Section 9 Inspection and Testing in ESI's "Hazardous Liquid Pipelines Plant Engineering Specification" and "Protection of DOT Regulated Pipelines During Construction and Repair Activities" Procedure DOT-008.

§ 195.248 Cover Over Buried Pipeline

(a) Unless specifically exempted in this subpart, all rice must be buried so that it is below the level of cultivation. Except as provided in paragraph (b) of this section, the rice must be installed so that the cover between the top of the rice and the ground level, road bed, river bottom, or sea bottom, as applicable, complies with the following table:

Location	Crown (inches)	
	For normal excava- tion	For rock excava- tion (1)
Industrial, commercial, and residential areas.....	30	30
Open ground.....	30	30
of water with a width of at least 120 ft from high water mark to high water mark.....	40	15
Drainage ditches or canals.....	30	30
Other drains.....	40	24
Discharge point safety zone.....	30	30
Other safety area within water less than 12 feet deep but dry or measured from the mean low tide.....	30	15
For other areas.....	30	15

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- (1) Back excavation is any excavation that requires blasting or removal by equivalent means.
- (b) Back excavation is any excavation that requires blasting or removal by equivalent means.
- (1) Back excavation is any excavation that requires blasting or removal by equivalent means.
- (2) Back excavation is any excavation that requires blasting or removal by equivalent means.

ESI RESPONSE to § 195.248:

Depth of ditch shall be appropriate for the route location, surface use of the land, terrain features, and loads imposed by roadways and railroads.

All buried pipelines shall be installed below the normal level of cultivation and with minimum cover not less than listed in the table in § 195.248 (a).

If the cover requirements cannot be met, pipe may be installed with less cover if additional protection is provided to withstand anticipated external loads and to minimize damage to the pipe by external forces.

Documentation	Location/Field
ESLCP Hazardous Liquid Pipeline Records - A-A	- DOT File
ESLCP Hazardous Liquid Pipeline Records - A-A	- DOT File
ESLCP Hazardous Liquid Pipeline Records - C-C	- DOT File

§ 195.250 Clearance Between Pipe and Underground Structures

Any pipe installed underground must have at least 12 inches of clearance between the outside of the pipe and the extremity of any other underground structures, except that for drainage ditches the minimum clearance may be less than 12 inches but not less than 6 inches. However, where 12 inches of clearance is impracticable, the clearance may be reduced if adequate provisions are made for corrosion control.

ESI RESPONSE to § 195.250:

Width and grade of ditch shall provide clearance for lowering of the pipe into the ditch to minimize damage to coating and to facilitate the pipe to the ditch.

A minimum clearance of 12 in. (0.3m) shall be maintained between the outside of any buried pipe or component and the extremity of any other underground structures. Reference Section 8.1.7 Ditching, Section 9 Inspection and Testing in ESI's "Hazardous Liquid Pipelines Plant Engineering Specification" and "Protection of DOT Regulated Pipelines During Construction and Repair Activities" DOT-008.

Documentation	Location/Field
ESLCP Hazardous Liquid Pipeline Records - A-A	- DOT File
ESLCP Hazardous Liquid Pipeline Records - A-A	- DOT File
ESLCP Hazardous Liquid Pipeline Records - C-C	- DOT File

§ 195.252 Backfilling

Backfilling must be performed in a manner that protects any pipe coating and provides firm support for the pipe.

ESI RESPONSE to § 195.252:

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Qualified inspectors will inspect piping and components prior to coating, the condition of the ditch bottom will be inspected prior to lowering pipe, the fit of pipe in ditch before backfilling, inspect backfill material prior to use and observe backfill procedure to assure no damage to the coating during backfilling.

Width and grade of ditch shall provide clearance for lowering of the pipe into the ditch to minimize damage to coating and to facilitate the pipe to the ditch.

Backfilling shall be performed to provide firm, continuous support under the pipe. When backfilling with material containing rocks, no rocks shall be closer to the pipe than 12 inches. A “rock-free” cylinder of sand or dirt shall be placed around the pipe maintaining the required 12 inches of small-particle backfill material. In addition, rock shields are required when the backfill material contains rocks over 4 inches in diameter.

Documentation	Location Filed
DOT Construction Record - A-1	DOT File
DOT Construction Record - A-2	DOT File
DOT Construction Record - C-1	DOT File

§ 195.254 Above Ground Components

- (a) Any component may be installed above ground in the following locations, if the other applicable requirements of this part are complied with:
- (1) Overhead crossings of highways, railroads, or a body of water;
 - (2) Spans over ditches and gullies;
 - (3) Scupper pipes or block valves;
 - (4) Areas under the direct control of the operator;
 - (5) In any area inaccessible to the public.

(b) Each component covered by this section must be protected from the forces exerted by the anticipated loads.

ESI RESPONSE to § 195.254:

Final assembly of all components shall minimize locked-in stresses. The entire assembly shall be adequately supported to provide minimum unbalance and vibration. Reference ESI’s “Hazardous Liquid Pipelines Plant Engineering Specification” Section 8 Construction, Assembly and Fabrication; 8.1.15 Special Crossings, Protection of Pipelines From Hazards, Water Crossings, Overhead Structures, and Bridge Attachments.

§ 195.256 Crossing of Railroads and Highways

The pipe at each railroad or highway crossing must be installed so as to adequately withstand the dynamic forces exerted by anticipated traffic loads.

ESI RESPONSE to § 195.256:

Safety of the general public and the prevention of damage to the pipeline by reason of its location are primary concerns. Construction specifications shall cover the procedure for these crossings based upon the requirements of the specific location. Reference ESI’s “Hazardous Liquid Pipelines Plant Engineering Specification” Section 8 Construction,

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Assembly and Fabrication; 8.1.15 Special Crossings: 8.1.15.5 Railroad and Highway Crossings for detailed information.

§ 195.258 Valves: General

(a) Each valve must be installed in a location that is accessible to authorized employees and that is protected from damage or tampering.

(b)

Each submerged valve located offshore or in inland navigable waters must be marked, or located by conventional survey techniques, to facilitate quick location when operation of the valve is required.

ESI RESPONSE to § 195.258:

Block and isolating valves shall be installed for limiting hazard and damage from accidental discharge and for facilitating maintenance of the piping systems.

Valves shall be located at accessible points on the pipeline, protected from damage or tampering, and suitably supported to prevent differential settlement or movement of the attached piping.

An operating device to open or close the block valve shall be protected and accessible only to authorized persons.

DISCP
Disruptive Construction/Minor Records - A-1
DISCP
Disruptive Construction/Minor Records - A-2
DISCP
Employee Qualification Records - C-1

DOT File
DOT File
DOT File

§ 195.260 Valves: Location

A valve must be installed at each of the following locations:

- (a) On the suction end and the discharge end of a pump station in a manner that permits isolation of the pump station equipment in the event of an emergency.
- (b) On each line entering or leaving a breakout storage tank area in a manner that permits isolation of the tank area from other facilities.
- (c) On each mainline or location along the pipeline system that will minimize damage or pollution from accidental hazardous liquid discharge, as appropriate for the terrain or open country, for offshore areas, or for populated areas.
- (d) On each lateral shutoff from a main line in a manner that permits shutoff of the lateral without interrupting the flow to other facilities.
- (e) On each side of a water crossing that is more than 100 feet wide from high-water mark to high-water mark within the Secondary limits, in a particular case that valves are not justified.
- (f) On each side of a reservoir holding water for human consumption.

ESI RESPONSE to § 195.260:

Mainline block valves shall be installed on the upstream of major river crossings and public water supply reservoirs. Either a block or check valve shall be installed on the downstream side of major river crossings and public water supply.

A mainline block valve shall be installed at mainline pump stations. A block or check valve shall be installed at other locations appropriate for the terrain features. In industrial, commercial, and residential areas where construction activities pose a particular risk of external damage to the pipeline, provisions shall be made for the appropriate spacing and location of mainline valves consistent with the type of liquids being transported.

A remotely operated mainline block valve shall be provided at remotely controlled pipeline facilities to isolate segments of the pipeline.

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

ESCP	Documentation	Location/Title
ESCP Construction/Repair Records - A-1		DOT File
ESCP		DOT File
ESCP Construction/Repair Records - A-2		DOT File
ESCP		DOT File
Employee Qualification Records - C-1		DOT File

§ 195.262 **Pumping Equipment**

- (a) Adequate ventilation must be provided in pump station buildings to prevent the accumulation of hazardous vapors. Warning devices must be installed to warn of the presence of hazardous vapors in the pumping station building.
- (b) The following must be provided in each pump station:
- (1) Safety devices that prevent overpressuring of pumping equipment, including the auxiliary pumping equipment within the pumping station.
 - (2) A device for the emergency shutdown of each pumping station.
 - (3) If power is necessary to actuate the safety devices, an auxiliary power supply.
- (c) Each safety device must be tested under conditions approximating actual operations and found to function properly before the pumping station may be used.
- (d) Except for offshore pipelines, pumping equipment must be installed on property that is under the control of the operator and at least 15.2 m (50 ft.) from the boundary of the pump station.
- (e) Adequate fire protection must be installed at each pump station. If the fire protection system installed requires the use of pumps, motive power must be provided for those pumps that is separate from the power that operates the station.

ESI RESPONSE to § 195.260:

Valves shall be installed on the suction and discharge of pump stations to assure the pipeline can be isolated from the pump station.

Valves shall be installed on lines entering or leaving tank farms or terminals at convenient locations. The tank farm or terminal may then be isolated from other facilities such as the pipeline, manifolds, or pump stations.

Pump stations, tank farms, or terminals shall be located when possible at safe distances from adjacent properties not under the control of the ESI to minimize the communication of fire from structures on adjacent properties.

Pressure controls and protective equipment, including pressure limiting devices, regulators, controllers, relief valves, emergency shutdown devices and other safety devices shall be installed where appropriate.

For detailed information reference ESI's "Hazardous Liquid Pipelines Plant Engineering Specification" Section 8 Construction, Assembly and Fabrication; 8.1.21 Pump Station, Tank Farm, and Terminal Construction:

- (1) General**
- (2) Location**
- (3) Building Installation**
- (4) Pumping Installation**
- (5) Pumping Equipment and Prime Movers**
- (6) Pump Station, Tank Farm, and Terminal Piping**

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(7) Controls and Protective Equipment

<u>Documentation</u>	<u>Location/Field</u>
HAZOP	
HAZOP Construction/Release Records - A-1	DOT File
HAZOP	
HAZOP Construction/Release Records - A-2	DOT File
HAZOP	
HAZOP Construction/Release Records - C-1	DOT File

§ 195.264 Above Ground Breakout Tanks

For above ground breakout tanks--	
(a)	A means must be provided for containing/hazardous liquids in the event of spillage or tank failure.
(b)	Tank areas must be adequately protected against unauthorized entry.
(c)	Normal and emergency relief venting must be provided for each tank.

ESI RESPONSE to § 195.264:

Dikes and firewalls shall be constructed to meet the capacity requirements in ANSI/NFPA 30.

Pump stations, tank farms, or terminals shall be located when possible with safe distances from adjacent properties not under control of ESI to minimize the communication of fire from structures on adjacent properties. Similar consideration shall be given to its relative location from the station manifolds, tankage, maintenance facilities, personnel housing, etc.

Sufficient open space shall be left around the building and manifolds to provide access for maintenance equipment and fire fighting equipment. Station, tank farm, and terminal shall be fenced to minimize trespass. Roadways and gates should be located to provide ready access to or egress from the facilities.

Tanks for storage or handling crude oil and liquid petroleum products and liquid alcohols having vapor pressures approximately atmospheric shall be constructed in accordance with ANSI/API 650, API 12B, API 12D, API 12F, or designed and constructed in accordance with accepted good engineering practices.

Tanks for storage or handling petroleum products and liquid alcohols having vapor gage pressures of 0.5 psi (0.035 bar) but not exceeding 15 psi (1 bar) shall be constructed in accordance with ANSI/API 620.

Tanks used for storage and handling liquids having vapor gage pressures greater than 15 psi (1 bar) shall be designed and constructed in accordance with design of accredited tank builders and the ASME Boiler and Pressure Vessel Code, Section VIII, Division 1 or 2.

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BSQP
BSQP Construction/Maint. Records - A-1
BSQP
BSQP Construction/Maint. Records - A-2
BSQP
BSQP Construction/Maint. Records - C-1

DOT File
DOT File
DOT File
DOT File

§ 195.266 Construction Records

A complete record that shows the following must be maintained by the operator involved for the life of each pipeline facility:

- | | |
|-----|--|
| (a) | The total number of girth welds and the number nondestructively tested, including the number rejected and the disposition of each rejected weld. |
| (b) | The amount, location, and cover of each size of pipe installed. |
| (c) | The location of each crossing of another pipeline. |
| (d) | The location of each buried utility crossing. |
| (e) | The location of each overhead crossing. |
| (f) | The location of each valve and commission station. |

ESI RESPONSE to § 195.266:

ESI shall maintain a record relative to design, construction, and testing of each pipeline. These records shall be maintained for the life of the facility. These records shall include:

- **Material specification**
- **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**

BSQP
BSQP Construction/Maint. Records - A-1
BSQP
BSQP Construction/Maint. Records - A-2
BSQP
BSQP Construction/Maint. Records - C-1

Documentation

DOT File
DOT File
DOT File
DOT File

Location File