

CHEVRON U.S.A. INC.
ENGINEERING DEPARTMENT - EL PASO, TEXAS

SPECIFICATION NO. EP-354-L
March 9, 1979
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SPECIFICATION NO. EP-354-L
FABRICATION AND INSTALLATION OF CAUSTIC PIPING
EL PASO REFINERY

1.0 SCOPE

- 1.1 CONTRACTOR shall provide all utilities, tools, construction equipment, labor, including supervision and inspection and all items of a consumable nature that are required for the fabrication and installation of caustic piping for the Chevron U.S.A. Inc. El Paso Refinery. The work is detailed by this Specification, including the attached drawings, instructions and specifications.

2.0 COMPANY FURNISHED ITEMS

- 2.1 COMPANY will furnish all piping materials required for fabricating the pipe spools except welding electrodes.
- 2.2 COMPANY will provide drinking water at no expense to CONTRACTOR for CONTRACTOR'S containers at a location designated by COMPANY'S Representative.
- 2.3 COMPANY will make work space available for CONTRACTOR'S use for fabrication work and for storage of materials.
- 2.4 COMPANY will furnish water for CONTRACTOR'S use in pressure testing those spools where a test is indicated on the drawings.

3.0 DELIVERY OF COMPANY PROVIDED MATERIALS

Materials furnished by COMPANY will be available to CONTRACTOR at the Refinery Storehouse. CONTRACTOR shall provide necessary labor and equipment for handling and transporting materials.

4.0 REFINERY REGULATIONS AND SAFETY

CONTRACTOR shall conform with attached Refinery Instruction No. 1404, "General Instructions to CONTRACTORS Working Within the Refinery".

5.0 PIPING

This Section applies to all piping and related fittings necessary for the operation of the facilities within the scope of this Specification. All piping shall be in accordance with the attached drawings.

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- 5.1 The welding procedure, quality of fit-up, tacking, and welding shall conform to the requirements of A.P.I. Standard 1104, latest edition, "Standard for Welding Pipe Lines and Related Facilities" and Specification EG-2505.
- 5.2 COMPANY may perform random radiography of welds in accordance with Section 7.0 of Specification EG-2505, to verify the overall quality of workmanship is in accordance with COMPANY standards set forth in this Specification. Welds so inspected shall be repaired or replaced by CONTRACTOR at no increase in CONTRACTOR'S compensation if the weld fails to meet said standards.
- 5.3 Welding Qualification Tests
- 5.31 Welders shall be required to pass qualification tests before performing any operation during construction of the project. COMPANY reserves the right to require additional qualification tests during construction if it has any doubt about the competence of welders. COMPANY shall be allowed to witness tests and to examine test coupons. If additional tests are required and passed by welders, cost of retesting will be borne by COMPANY; if failed, cost of retesting shall be borne by CONTRACTOR.
- 5.32 CONTRACTOR shall arrange for welding qualification tests at his own expense at El Paso Testing Company, Inc., 2315 Myrtle Street, El Paso, Texas 79901, phone 532-3831.
- 5.33 The required qualification tests shall be the "Pipe Test for Qualification of Metal Arc Welders" as described in Appendix I of Engineering Instruction No. EP-310. Welds shall be made in seamless pipe conforming to ASTM Specs. A-106 or A-53 or API Spec. 5-L. Weld rods shall be Type E-6010 mild steel electrodes.
- 5.34 The face and root bend specimens shall be tested in the guided bend test jig described in Fig. Q-7 of the ASME Boiler and Pressure Vessel Code, Section IX, Welding Qualifications.
- 5.35 The convex surface of the bend specimens shall be examined for cracks or other open defects. Any specimen in which a crack or open defect is present, after bending, exceeding 1/8" measured in any direction shall be considered as having failed. Cracks which originate along the edges of the specimen during testing and that are minor in extent shall not be considered unless there is definite evidence that they result from slag inclusions or other internal defects.

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- 5.36 The fractured surfaces of the nick-break test shall show complete penetration throughout the entire thickness of the weld, absence of oxide or slag inclusions, and a degree of porosity not to exceed six gas pockets per square inch of the total area of the weld surface exposed in the fracture, the maximum dimension of any such pocket not to be in excess of 1/16".
- 5.37 If the welder fails in one of the test positions, he may be allowed to take an immediate retest by making two test pieces in the failed position. Both of the test pieces shall pass the test requirements. If the welder fails in more than one position, he shall not be allowed to take a retest.
- 5.38 Upon passing the qualification tests, CONTRACTOR shall assign each welder an identification number. This number shall thereafter be used by the welder to identify his work by stamping it alongside each completed weld with steel stencils.
- 5.39 At the option of the COMPANY'S Lead Equipment Inspector, CONTRACTOR'S welders need not pass the welding qualification tests if they can present suitable and acceptable evidence of having passed the appropriate ASME Performance Qualification Tests as described in Section IX of the ASME Boiler and Pressure Vessel Code.
- 5.4 After piping systems are complete, the CONTRACTOR shall blow the lines clean with air, and test the piping systems to pressures listed on drawings in accordance with Refinery Instruction No. 1501, attached. Any defects found shall be repaired by CONTRACTOR, followed by another pressure test. All hydrostatic tests shall be witnessed by a COMPANY Representative.

6.0 INSPECTION AND TESTING

CONTRACTOR shall be solely responsible for thorough inspection during construction and for the quality of the work. COMPANY will make such inspection as COMPANY may desire in order to check the progress and quality of the work, to see that CONTRACTOR'S employees are properly qualified in their respective crafts, that workmanship is of an acceptable grade, and that all requirements of this Specification are being met. Such inspection or any other inspection or testing by COMPANY shall not relieve CONTRACTOR of full responsibility for the work hereunder.

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7.0 DRAWINGS AND SPECIFICATIONS

The following drawings, Engineering Instructions and standard specifications further detail the work covered by this Specification:

PC-19-20790, sheet 218

PD-13-29691

Engineering Instruction EP-310 - Pipe Test for Qualification of Metal Arc Welders.

Refinery Instruction 1501 - Hydrostatic Testing of Equipment.

Refinery Instruction 1404 - Instructions to Contractors Working Within the Refinery.

Specification EG-2505 - Fabrication of Steel Piping.