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(7) The arrangement of pipe, components, and supports must provide safety under anticipated operating stresses.

(8) Each joint between sections of pipe, and between pipe and valves or fittings, must be made in a manner suitable for the anticipated pressure and temperature condition. Slip type expansion joints may not be used. Expansion must be allowed for by providing flexibility within the system itself.

(9) Each control line must be protected from anticipated causes of damage and must be designed and installed to prevent damage to any one control line from making both the regulator and the over-pressure protective device inoperative.

[35 FR 13257, Aug. 19, 1970, as amended by Amdt. 192–78, 61 FR 28784, June 6, 1996; Amdt. 192–85, 63 FR 37503, July 13, 1998]

Subpart E—Welding of Steel in Pipelines

§ 192.221 Scope.

(a) This subpart prescribes minimum requirements for welding steel materials in pipelines.

(b) This subpart does not apply to welding that occurs during the manufacture of steel pipe or steel pipeline components.

§ 192.225 Welding procedures.

(a) Welding must be performed by a qualified welder in accordance with welding procedures qualified under section 5 of API 1104 (incorporated by reference, *see* §192.7) or section IX of the ASME Boiler and Pressure Vessel Code '' Welding and Brazing Qualifications'' (incorporated by reference, *see* §192.7) to produce welds meeting the requirements of this subpart. The quality of the test welds used to qualify welding procedures shall be determined by destructive testing in accordance with the applicable welding standard(s).

(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.

[Amdt. 192–52, 51 FR 20297, June 4, 1986; Amdt. 192–94, 69 FR 32894, June 14, 2004]

§ 192.227 Qualification of welders.

(a) Except as provided in paragraph (b) of this section, each welder must be qualified in accordance with section 6 of API 1104 (incorporated by reference, see §192.7) or section IX of the ASME Boiler and Pressure Vessel Code (incorporated by reference, see §192.7). However, a welder qualified under an earlier edition than listed in §192.7 of this part may weld but may not requalify under that earlier edition.

(b) A welder may qualify to perform welding on pipe to be operated at a pressure that produces a hoop stress of less than 20 percent of SMYS by performing an acceptable test weld, for the process to be used, under the test set forth in section I of Appendix C of this part. Each welder who is to make a welded service line connection to a main must first perform an acceptable test weld under section II of Appendix C of this part as a requirement of the qualifying test.

[35 FR 13257, Aug. 19, 1970, as amended by Amdt. 192–43, 47 FR 46851, Oct. 21, 1982; Amdt. 192–52, 51 FR 20297, June 4, 1986; Amdt. 192–78, 61 FR 28784, June 6, 1996; Amdt. 192–94, 69 FR 32894, June 14, 2004; Amdt. 192–103, 72 FR 4656, Feb. 1, 2007]

§ 192.229 Limitations on welders.

(a) No welder whose qualification is based on nondestructive testing may weld compressor station pipe and components.

(b) No welder may weld with a particular welding process unless, within the preceding 6 calendar months, he has engaged in welding with that process.

(c) A welder qualified under §192.227(a)—

(1) May not weld on pipe to be operated at a pressure that produces a hoop stress of 20 percent or more of SMYS unless within the preceding 6 calendar months the welder has had one weld tested and found acceptable under the sections 6 or 9 of API Standard 1104 (incorporated by reference, *see* §192.7). Alternatively, welders may maintain an ongoing qualification status by performing welds tested and found acceptable under the above acceptance criteria at least twice each calendar year, but at intervals not exceeding 7½ months. A welder qualified under an