Inspection Practices for Pressure Vessels

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1 Scope

This recommended practice (RP) supplements API 510 by providing pressure vessel inspectors with information that can improve skills and increase basic knowledge of inspection practices. This RP describes inspection practices for the various types of pressure vessels (e.g. drums, heat exchangers, columns, reactors, air coolers, spheres) used in petroleum refineries and chemical plants. This RP addresses vessel components, inspection planning processes, inspection intervals, methods of inspection and assessment, methods of repair, records and reports. API 510 has requirements and expectations for inspection of pressure vessels.

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

API 510, *Pressure Vessel Inspection Code: In-service Inspection, Rating, Repair, and Alteration*

API Recommended Practice 571, *Damage Mechanisms Affecting Fixed Equipment in the Refining Industry*

API Recommended Practice 574, *Inspection Practices for Piping System Components*

API 579-1/ASME FFS 1 [1], *Fitness-For-Service*

API Recommended Practice 580, *Risk-Based Inspection*

API Publication 2217A, *Guidelines for Safe Work in Inert Confined Spaces in the Petroleum and Petrochemical Industries*

ASME *Boiler and Pressure Vessel Code (BPVC), Section VIII: Pressure Vessels*

3 Terms and Definitions

3.1 Definitions

For the purposes of this document, the following definitions apply.

3.1.1
alteration
A physical change in any component that has design implications that affect the pressure-containing capability of a pressure vessel beyond the scope described in existing data reports. The following should not be considered alterations: any comparable or duplicate replacement, the addition of any reinforced nozzle less than or equal to the size of existing reinforced nozzles, and the addition of nozzles not requiring reinforcement.

3.1.2
cladding
A metal integrally bonded onto another metal under high pressure and temperature whose properties are better suited to resist damage from the process than the substrate material.

[1] ASME International, 3 Park Avenue, New York, New York 10016, www.asme.org.