

Inspection of Fired Boilers and Heaters

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Inspection of Fired Boilers and Heaters

1 Scope

This recommended practice (RP) covers the inspection practices for fired boilers and process heaters (furnaces) used in petroleum refineries and petrochemical plants. The practices described in this document are focused on improve equipment reliability and plant safety by describing the operating variables that impact reliability, and to ensure that inspection practices obtain the appropriate data, both on-stream and off-stream, to assess current and future performance of the equipment.

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

API Recommended Practice 572, *Inspection Practices for Pressure Vessels*

API Recommended Practice 578, *Material Verification Program for New and Existing Alloy Piping Systems*

API Recommended Practice 579, *Fitness-For-Service*

API Recommended Practice 580, *Risk Based Inspection*

API Recommended Practice 939-C, *Guidelines for Avoiding Sulfidation (Sulfidic) Corrosion Failures in Oil*

API Standard 530, *Calculation of Heater Tube Thickness in Petroleum Refineries*

AISC M015L¹, *Manual of Steel Construction, Load and Resistance Factor Design*

AISC M016, *Manual of Steel Construction, Allowable Stress Design*

ASME B31.1², *Power Piping*

ASME Boiler and Pressure Vessel Code, *Section I: Power Boilers*

ASME Boiler and Pressure Vessel Code, *Section IV: Heating Boilers*

ASME Boiler and Pressure Vessel Code, *Section VI: Recommended Rules for Care and Operation of Heating Boilers*

ASME Boiler and Pressure Vessel Code, *Section VII: Recommended Guidelines for Care of Power Boilers*

ASME Boiler and Pressure Vessel Code, *Section IX: Welding and Brazing Qualification*

ASNT CP-189³, *ASNT Standard for Qualification and Certification of Nondestructive Testing Personnel*

¹ AISC, One East Wacker Drive, Suite 700, Chicago, Illinois 60601-1802, www.aisc.org.

² ASME International, 3 Park Avenue, New York, New York 10016-5990, www.asme.org.

³ ASNT, 1711 Arlingate Lane, Columbus, OH 43228-0518, www.asnt.org.