Heat Recovery Systems

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Suggested revisions are invited and should be submitted to the Standards Department, API, 200 Massachusetts Avenue, NW, Suite 1100, Washington, DC 20001, standards@api.org.

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Introduction

Users of this recommended practice (RP) need to be aware that further or differing requirements can be needed for individual applications. This RP is not intended to inhibit a vendor from offering, or the purchaser from accepting, alternative equipment or engineering solutions for the individual application. This can be particularly applicable where there is innovative or developing technology. Where an alternative is offered, the vendor should identify any variations from this RP and provide details.

This RP requires the purchaser to specify certain details and features.

In this RP, System International (SI) units are used and where practical, U.S. customary (USC) units are included in parentheses for information.

Heat Recovery Systems

1 Scope

1.1 This recommended practice (RP) provides guidelines for heat transfer equipment used in waste heat recovery systems in the petroleum, petrochemical, and natural gas industries. Details of related equipment designs are included only where these are necessary to ensure proper design and operation and safe interaction with the heat recovery system. It indicates areas that need attention and offers information and descriptions of various types of heat transfer equipment available to aid in the selection of the appropriate heat recovery system.

1.2 This RP does not include detailed requirements for:

— process to process heat recovery systems,

— gas turbine exhaust heat recovery,

— CO boilers, or

— convection sections used within fired heaters.

1.3 The waste heat recovery systems included in this RP are typical of those currently in use and should not limit the use of alternate systems.

1.4 Instrumentation and controls for waste heat recovery systems are sometimes mentioned but is not meant to completely define all requirements. Other standards and documents, such as API Recommended Practice 556, *Instrumentation, Control, and Protective Systems for Fired Heaters*, should be used to fully define the needed instruments and controls.

2 Normative References

There are no normative references in this document.

3 Terms, Definitions, Acronyms, and Abbreviations

3.1 Definitions

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

3.1.1
approach temperature
The difference between the saturation temperature of the steam at the selected pressure and the temperature of the water leaving the economizer.

3.1.2
desuperheater
attemperator
A device located internal or external to the HRSG that controls the exit temperature of the steam from the superheater. The device typically injects water with very low solids content into the steam to control the steam temperature by reducing it. Also called an attemperator.

3.1.3
downcomer
A heated or unheated pipe carrying water from the steam drum to an evaporator/generator section of an HRSG.