Design, Fabrication, Operational Effects, Inspection, Assessment, and Repair of Coke Drums and Peripheral Components in Delayed Coking Units

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1 Scope

This technical report includes information and guidance on the practices used by industry practitioners on the design, fabrication, operation, inspection, assessment and repair of coke drums and peripheral components in delayed coking units. The guidance is general and does not reflect specific details associated with a design offered by licensors of delayed coking technology, or inspection tools, operating devices/components, repairs techniques, and/or engineering assessments offered by contractors. For details associated with the design offered by a licensor or services provided by contractors, the licensor or contractor should be consulted for guidance and recommendations for their design details and operating guidance. **This document is a technical report and as such, provides generally used practices in industry and is not an API Recommended Practice for coke drums in delayed coking units.**

2 Normative References

No other document is identified as indispensable or required for the application of this technical report. A list of documents associated with API 934-G are included in the bibliography.

3 Terms, Definitions, and Acronyms

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

3.1 Terms and Definitions

For the purpose of this technical report, the following definitions apply.

3.1.1
ASME Code
ASME *Boiler and Pressure Vessel Code,* Section II, Parts A though D, Section V, Section VIII, Division 1 and Division 2, and Section IX, including applicable addenda and Code Cases.

3.1.2
final PWHT
The last post weld heat treatment (PWHT) after fabrication of the vessel and prior to placing the vessel in service.

3.1.3
fracture ductility
The term used to define the limiting ductility before fracture occurs as a result of low cycle fatigue as modeled using the Coffin-Manson equation. It is typically defined as follows:

$$\text{fracture ductility} = \ln(100/(100 - \text{RA}))$$

where

RA is reduction in area during a tensile test.