Agenda Item: 653-1013

Title: **Retirement Thickness**

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Purpose: To resolve confusion around “retirement thickness” as per question submitted in INQ-653-D022

Reference: **API 653 4.3.3 Minimum Thickness Calculation for Welded Tank Shell**
4.3.3.1 The minimum acceptable shell plate thickness for continued service shall be determined by one or more of the methods noted herein. These methods are limited to tanks with diameters equal to 200 ft or less.

Revision: 0

Impact: No impact, editorial clarification

Background: API Standard 653 uses “retirement thickness” twice in the document but this term is not defined. API 575, 7.3.2.1 “Minimum Acceptable Thickness of Plates” also uses “retirement thickness” but that document doesn’t define this term. Although subcommittee of inspection and mechanical integrity has put together a SCIMI definitions document they don’t define this term either.

Proposal: Change retirement thickness to “minimum acceptable thickness” which is referenced in 4.3.3.1

Rationale: Retirement thickness isn’t defined in API 653. Typically owner/operators are determining what repairs are needed to achieve an acceptable remaining thickness in the tank bottom until the next inspection interval vs. operating the tank until the remaining thickness is at the point where the tank is demolished or abandoned as implied by the term “retirement”.

LEGEND:

Black text is the existing API 653 language.
Blue text is the recommended changes to API 653.

4.3.3 Minimum Thickness Calculation for Welded Tank Shell

E is the original joint efficiency for the tank. Use Table 4.2 if original E is unknown. E = 1.0 when evaluating the **minimum acceptable** ~~retirement~~ thickness in a corroded plate, when away from welds or joints by at least the greater of 1 in. or twice the plate thickness.

9.3 Shell Repairs Using Lap-welded Patch Plates

9.3.3 Lapped patch repair plates may be used to reinforce areas of severely deteriorated shell plates that are not able to resist the service loads to which the tank is to be subjected. Lapped patch repair plates may also be used for shell plates that are below the **minimum acceptable** ~~retirement~~ thickness, providing the following additional requirements are satisfied.