

Title:	Slushing Seismic Freeboard (650)		Agenda Item # 650-1120
Date:	08/31/2023		
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Purpose:	Correct and clarify seismic freeboard rules in API 650		
Source:	Email from Andy Wong 9/28/2022, Andrew Yearwood, PEMY Consulting, (918) 698-2110, andrew@pemyconsulting.com		
Revision:	0		
Impact:	Neutral		
Rationale:	<p>API 650 Annex E states that freeboard is required for some SUG II tanks and all SUG III. However, two alternatives are allowed – secondary containment or that the shell and roof be designed to handle the slushing wave.</p> <p>API 650 uses non-standard terminology for the seismic design liquid level, and this can easily be clarified by using the defined term “design liquid level.”</p> <p>Proposed changes in red font.</p>		
Proposed verbiage:	<p>API 650 Annex E E.2.2 Notations ... H Maximum design product level Design liquid level, m (ft)</p> <p>E.7.2 Freeboard Slushing of the liquid within the tank or vessel shall be considered in determining the freeboard required above the design liquid level top capacity liquid level. A minimum freeboard shall be provided per Table E.7. See E.4.6.1. Purchaser shall specify whether freeboard is desired for SUG I tanks. Freeboard is required for SUG II and SUG III tanks. The height of the slushing wave above the product design height design liquid level can be estimated by:</p>		