API 521 8ᵗʰ Edition Ballot Item 1
2ⁿᵈ Reballot of API 521 7ᵗʰ Edition Ballot Item 6.9
Unit Knockout Drum

Proposed Modification to API 521 6th Ed Section 5.7.9.5 Sizing (section 5.7.8.5 in current 7th Edition draft) 3rd from last paragraph:

If unit knockout drums are provided upstream of the main flare knockout drum, these upstream drums need not meet the droplet size criteria required at the flare tip because the flare knockout drum shall be designed to do so. ~~However, some credit can be taken for liquid holdup in the upstream drum to achieve the required liquid holdup capacity specified above. If the upstream drum is not designed for the full 20 min to 30 min liquid holdup requirement, then the downstream flare knockout drum shall have any required remaining liquid holdup capacity.~~ The unit knockout drum system should be designed for the unit maximum load as calculated in 5.3.~~3~~ ~~unless dynamic system load modeling (see 5.3.4.2) and/or load reduction credits (see 5.3.4.3) are applied.~~ Any credible scenario of liquid or two-phase outlet flow from a unit knockout drum shall be addressed per 5.5.11.

The liquid holdup requirement for the main flare knockout drum is based on the flow of liquids into that drum. Therefore, liquid relief flows separated and retained in upstream unit flare knockout drums do not have to be considered in sizing the main flare knockout drum.

{Note: The black text above is the issued API text, the red text is previous modifications, and the green text is the modification from May 10, 2021 API 521 task force meeting. Strikethrough indicates removal of text and color (red or green) indicates the timing of that removal.}

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Proposed Modification to API 521 6th Ed Section 5.7.9.5 Sizing (section 5.7.8.5 in current 7th Edition draft) 3rd from last paragraph:

If unit knockout drums are provided upstream of the main flare knockout drum, these upstream drums need not meet the droplet size criteria required at the flare tip because the flare knockout drum shall be designed to do so. The unit knockout drum system should be designed for the unit maximum load as calculated in 5.3. Any credible scenario of liquid or two-phase outlet flow from a unit knockout drum shall be addressed per 5.5.11.

The liquid holdup requirement for the main flare knockout drum is based on the flow of liquids into that drum. Therefore, liquid relief flows separated and retained in upstream unit flare knockout drums do not have to be considered in sizing the main flare knockout drum.