

What if Refueling goes wrong?

Making refueling inherently safe

Vancouver GTR13 TF3 March 4 2019 Guy de Réals • This document and the information contained herein is l'Air Liquide S.A. or one of its affiliates' property. The document is confidential business information and may furthermore contain confidential technical information. It is provided to certain employees of the Air Liquide Group for their internal use exclusively in the course of their employment. Any reproduction or disclosure of all or part of this document to third parties is prohibited without the express written consent of an authorized representative within the Air Liquide Group. If you have received this document by mistake, please immediately notify the sender and destroy the original message.

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GMT



TF3: HRS Control failure

- EIGA Risk Assessment: With today SIL rated designs, Ramp rate control failure 10^-5/year
 - Today with limited number of refueling we are ok, BUT
 - When there will be 20M refueling/day, Ramp Rate Control Failure will occur several times/year
- According to Simulations, Liner temperatures up to 120°C can be achieved
- H2 infrastructure industry, OEM, Tank manufacturers to coordinate to reach acceptable risk level.
 - TF 3 discussed an inherent safety approach Adding an elevated temperature test in tank qualification, as suggested by the infrastructure side. It was agreed to hold a workshop to understand the requirements better

