Overview of Challenges with Controlling, Mitigating and Eliminating Methane Emissions from Tanks

PTAC Tank Emissions Sprint Day 3
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Challenge Area #1 – Safety

- Tanks can be (usually are) hazardous
  - Solutions should be able to be installed, operated and maintained without increasing risks to personnel
    - Equipment at grade
    - Minimal personnel time on tank top
    - Installation on new tanks preferred to retrofit in the field
  - Solutions must be safe for tanks
    - No ignition sources - Approved for area classification
    - Freeze protected for safe reliable operation year round
    - Ensure tank over/under pressure conditions are prevented
    - Ensure tanks are designed to fail safely (frangible roof welds) – API 650 or other applicable regulations
Challenge Area #2 – Environment

Ensure that the net environmental benefit is positive

- Priority for tank vent mitigation results, should be:
  - Human or Environmental Health issues with emissions (e.g. H₂S)
  - GHG Reduction – often achieved at the same time
  - Nuisance emissions – e.g. odours often achieved at the same time

- Manufacturing, delivering and installing any mitigation measures will result in GHG emissions or other negative health or environmental impacts, so:
  - Mitigation method should not cause negative health impacts elsewhere
  - Life cycle net GHG benefits of mitigation should be shown to be lower than “do nothing”
  - If the main target is elimination of nuisance odors from tank vents, avoid creating a new nuisance, such as noise or light pollution
Challenge Area #3 – Economic

- Ensure that the right problem is being solved
  - Often tank emissions can be due to upstream operations which are easier and lower cost to mitigate → e.g. valves passing, oil wells pumped off, inefficient separation, process vessel T&Ps

- Assess over well life with realistic flow projections
  - Most oil and gas assets decline, so don’t assume steady state or that all similar sites will have the same vent volumes
  - Assess over a range of flows, not a single value

- Initial Installs vs. Retrofits
  - Installing on new equipment in a shop is much safer and economic than field retrofits, especially if downtime is required

- Relocatable
  - Ability to use equipment more than once