Gas House Safety

SATA 2009
Gas House Construction

1. 100 psf minimum or light weight vent design (NFPA 58 only)
2. Non combustible materials
   a. Exception for relief panels, pneumatic tubing, etc
3. Openings to adjacent building protected by automatic closing door or damper – ducts, tunnels, doors
Relief Panels

1. NFPA 58 - 1 square foot of panel per 50 cubic feet of room volume
2. NFPA 30B – 1 square foot of panel per 30 cubic of room volume
3. Relief panels must open at 20% of wall strength

eg: Walls 100psf – panels open 20psf
Gas House
Location

- 1. 25 feet from tank farm
- 2. 15 feet from any ignition source
- 3. Exhaust vents should be at least five feet from any opening into building*

* If adjacent building has tendency to hold vapors, duct fresh air inlets above roof
Ventilation

1. NFPA 58 - 1 cfm per square foot of floor area.

2. NFPA 30 B – 1 air change per minute or CFM per formula

   \[ VR = (100 - LEL) \times (V) \times (R) \times (DL) \times (LEL) \]
Ventilation Criteria

1. Type of filling equipment
   a. TTV – low
   b. UTC – potentially high

2. Anticipated product release
Ventilation
Critical Checks

1. Air sweeps uniformly across floor
2. Gas House is negative to connecting room(s)
3. Establish schedule to replace air filters to maintain required air flow
4. Insure that high level is 1 ½ times minimum flow
GASSER ENCLOSURE

1. No Enclosure
2. Mesh Enclosure
3. Solid Enclosure
   a. If used with Fenwal may require additional sensor and canister
Fenwal

1. Changes to system has added redundancy

2. Gas houses should be UV tight
   a. Reflected light from tunnels
   b. Walls/ceilings
   c. Door openings
Venting in Gas House

1. Venting into Gas House not allowed.*

*To safely vent, run tubing from vent valves into exhaust air duct.
Expansion/Update Checklist

1. Add DME as propellant, change electrical to class C
2. Add additional gassers, may require increase in ventilation
3. Relief panels adequate for current requirements
4. Discharge from relief panels allow for safe venting
5. Disposal drum in or adjacent to gas house
6. Have added powder or other high static products
7. Grounding and bonding – replace polymer hoses with SS braid