

The ABC's of AA, BB and CC

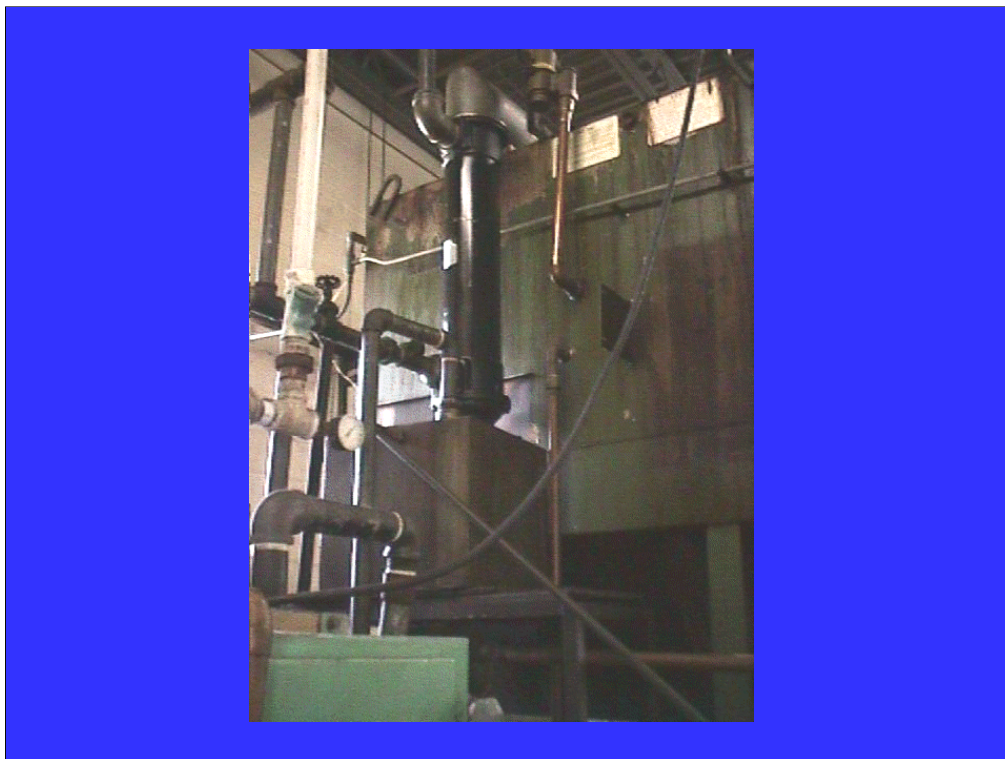


Comparison

	<u>AA</u>	<u>BB</u>	<u>CC</u>
<u>Action Level</u>	10 ppm organic concentration	10% organic concentration	500 ppm VO concentration
<u>Applies to:</u>	TSD's	TSD's and LQG's	TSD's and LQG's
<u>Purpose</u>	End-of-pipe emission control	Fugitive emissions	Fugitive & end-of-pipe
<u>Type of Equipment</u>	Treatment Units (stills, strippers)	Pumps, valves, flanges	Tanks and containers

Subpart AA

- Applies to process vents associated with
 - Distillation
 - Fractionation
 - Thin Film Evaporation
 - Solvent Extraction
 - Air Stripping



Subpart AA (cont.)

- Applies to wastes with organic concentrations of 10ppmw
- Applies to either a permitted unit or an unpermitted unit at a facility subject to a permit
- generally, does not apply to generators

Subpart AA (cont.)

- “End-of-pipe” standards
 - reduce emissions below 3 lbs/hr (3.1 tons/yr) or
 - reduce, by use of a control device, emissions by 95%

Subpart AA Control Devices

- thermal incinerator
- catalytic incinerator
- flare
- boiler or process heater
- condenser
- carbon adsorption

Subpart AA establishes standards for control devices such as:

- Monitoring devices (carbon breakthrough detectors, temperature sensors, flow indicators)
- Inspections
- Air monitoring of the vent system for leaks
- Recordkeeping, including design specifications and monitoring results

Subpart BB

- Leak detection and repair program (LDAR)
- applies to equipment that contacts waste with organic concentrations of 10% by weight
- applies to generators as well as TSD's

Is equipment tagging required?



“Each piece of equipment to which this subpart applies shall be marked in such a manner that it can be distinguished readily from other pieces of equipment”
40 CFR 265.1050(c)

Requires emission monitoring of:

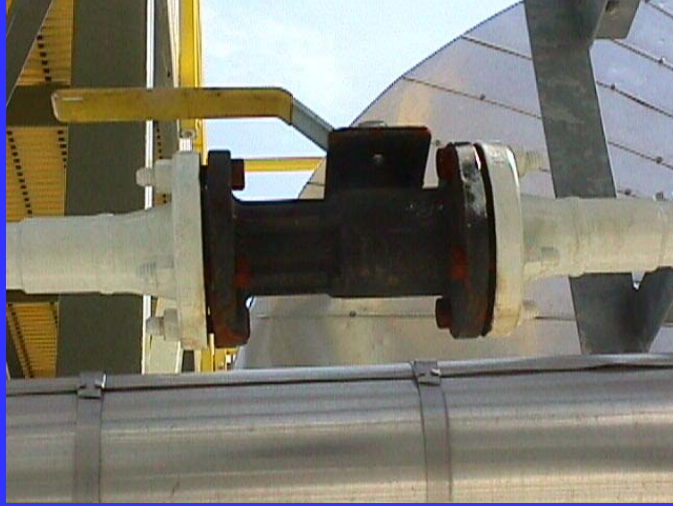


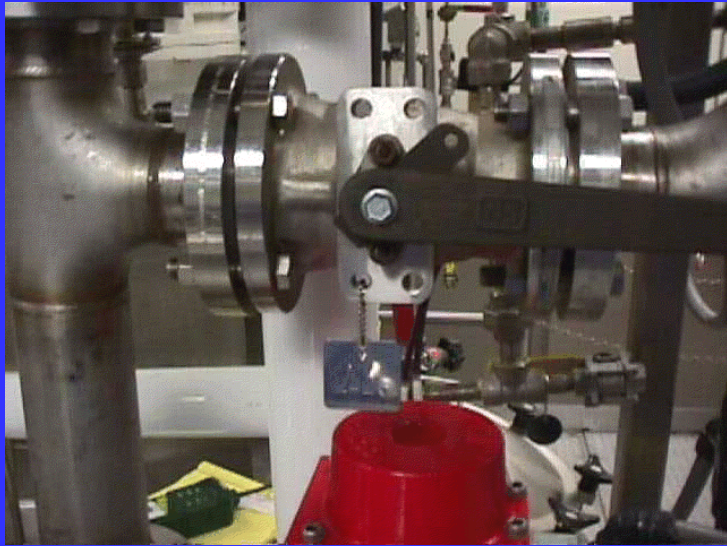
- compressors
- pressure release devices
- sampling connections

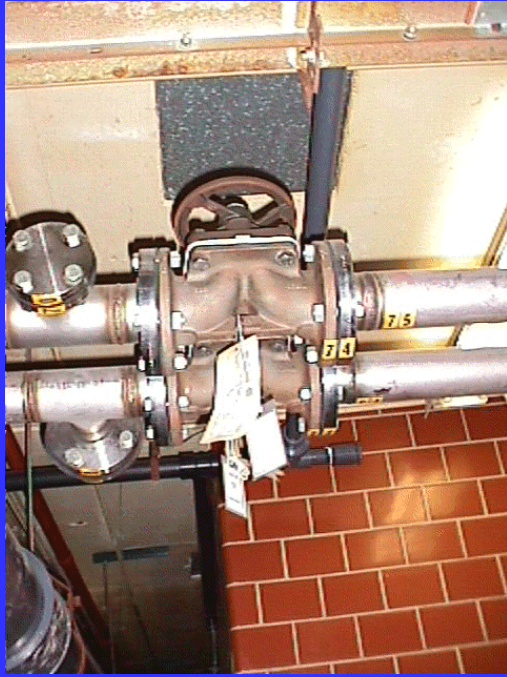
-open ended valves and lines



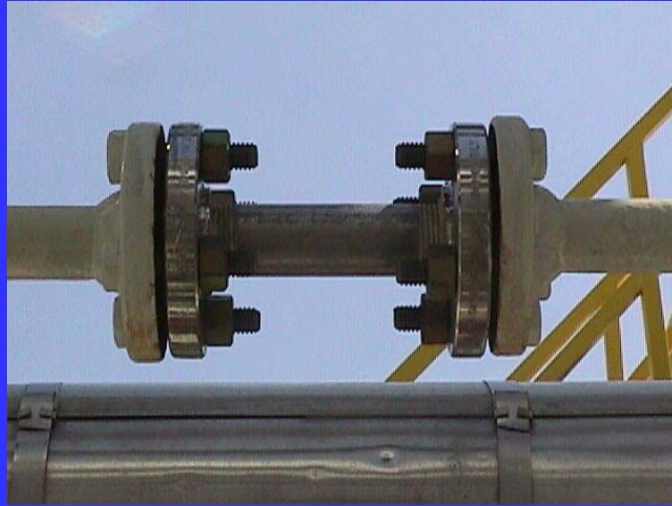
-valves







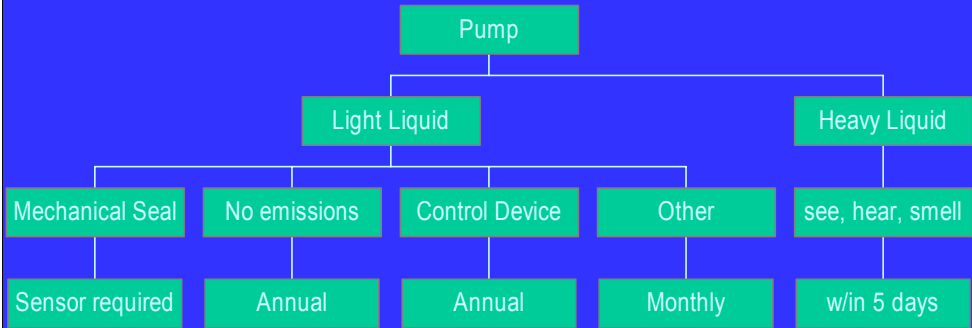
-flanges and connectors





Pump Standards

Pump Monitoring Requirements



Monitoring- Method 21

- Traverse probe around potential leak interface
- Detection instrument must meet performance criteria
- Must be calibrated daily & use specific cal gases
- Must determine background

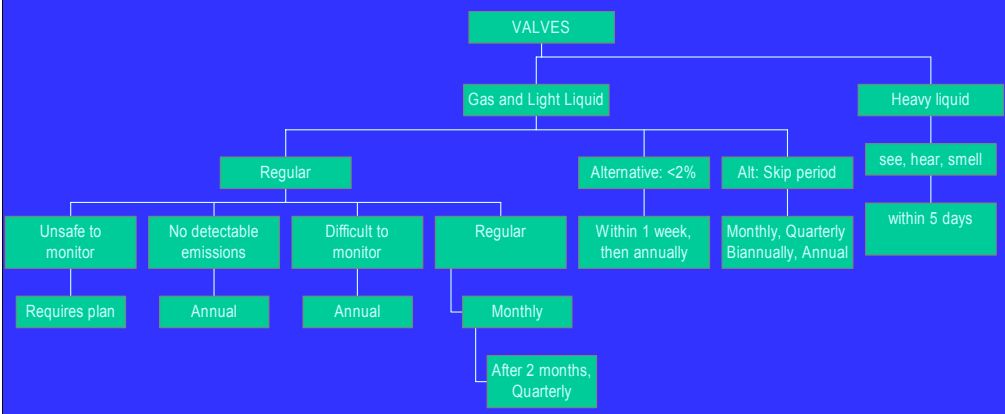
If an instrument reading of
10,000 ppm or greater is
measured, a leak is detected.

Response to Leaks

- Must be repaired as soon as practicable, but not later than 15 days, unless it meets “delay of repair” standards (infeasible, isolated, excess emissions)
- First attempt at repair within 5 days
- **MUST BE TAGGED**
- **MUST BE DOCUMENTED**

Valve Standards

Valve Monitoring Schedule



Monitoring flanges and other connectors:

“...flanges and other connectors shall be monitored within 5 days...if evidence of a potential leak is found by visual, audible, olfactory, or any other detection method.”

BB Recordkeeping

- FOR EACH PIECE, must record equipment ID #, location, type, waste stream info, and compliance method
 - For recordkeeping purposes, “connector” means flange
- Leak information
- Information on excluded equipment and equipment managed under alternative standards

SUBPART CC

- Applies to tanks, containers and surface impoundments
- Applies to TSD's and LQG's
- Applies to units where waste has average VO concentration of 500 ppmw
- Containers less than approx 30 gal. exempt
- Other exemptions

Level 1 Tank

- Not heated
- Conditions:

<u>Capacity</u>	<u>Max Vapor Press</u>
=/> 151 cu m	5.2 kPa
75-151 cu m	27.6 kPa
< 75 cu m	76.6 kPa



Level 2 Tank

- Used for stabilization
- Doesn't meet Tank Level 1 conditions
- Method 21 monitoring of closure devices
- Usually requires a control device
 - standards found in Subpart AA
 - carbon adsorber, flare, incinerator, condenser, etc



“No detectable emissions”

265.1084(d)

- “The arithmetic difference between the maximum organic concentration indicated by the instrument and the background level shall be compared with the value of 500 ppmv...If the difference is less than 500 ppmv, then the potential leak interface is determined to operate with no detectable emissions”
- 10,000 ppmv for a rotating shaft



Conservation vent

- “a pressure relief device which vents to the atmosphere ...for the purpose of maintaining the tank internal pressure in accordance with the tank design specifications. Examples...are...loading operations or diurnal ambient temperature fluctuations.”



	<u>Level 1</u>	<u>Level 2</u>
<u>Openings</u>	Closure device or non-spec control device	Closure device or regulated control device
<u>Closure Devices</u>	No gaps, cracks or deterioration	Vacuum or no detectable emissions
<u>Cover</u>	Fixed	Floating, vented, pressurized or use an enclosure
<u>Conservation Vent</u>	Allowed	Not allowed
<u>Monitoring</u>	Annual visual	Annual Method 21
<u>PR Devices</u>	No detectable emissions when closed	No detectable emissions when closed



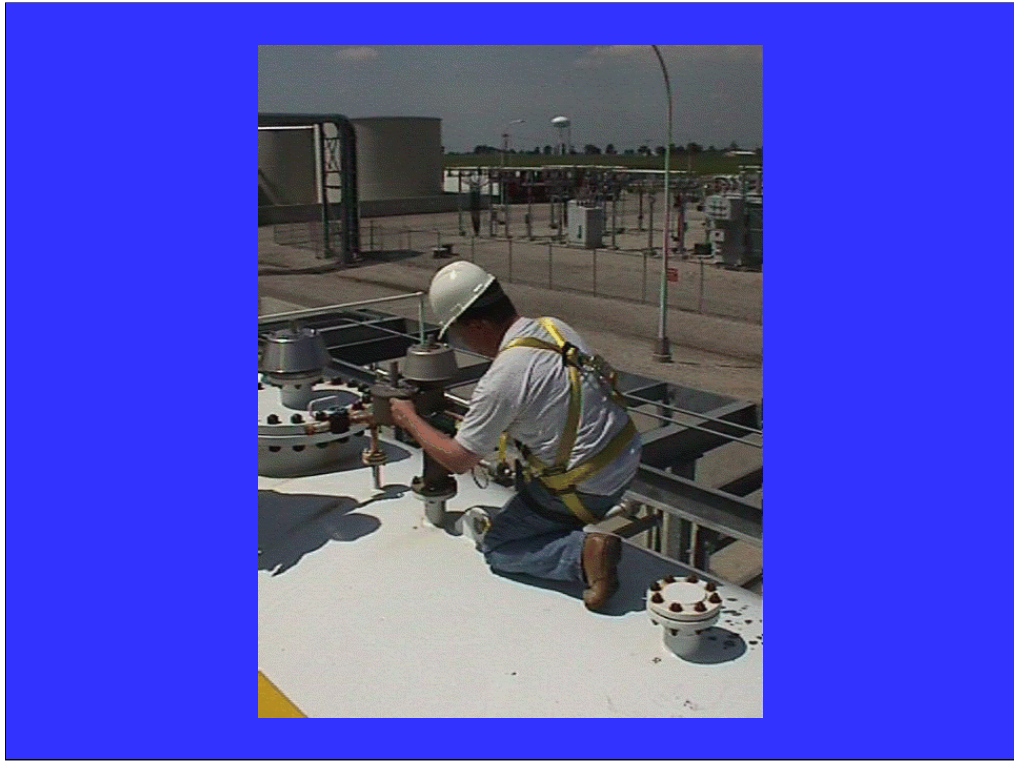














Control Devices

thermal incinerator

catalytic incinerator

flare

boiler or process heater

condenser

carbon adsorption

Example: Carbon Adsorber

- Design analysis, including certification that maximum load conditions were used for the design
- Documented daily or other predetermined monitoring for breakthrough, or scheduled replacement
- Bypass must be locked out or have a flow indicator

Carbon Adsorption System



Subpart CC: Containers

- Level 1:
 - DOT , up to 110 gal, closed
- Level 2
 - >110 gal, transfer controls required (submerged fill pipe, vapor balance system), closed, annual inspection required
- Level 3
 - typically used for stabilization
 - must be vented to a control device

CC Recordkeeping

- Tank identification and date of annual monitoring
- Information on defects detected during inspections
- Level 1 Tank vapor pressure determination
- Design analysis documentation
- Control device malfunction information

TTHAANNKSS!!