

# 900 AREA

## Incinerator

In the incinerator area, plant vents are burned in a controlled environment. The combustion air blower supplies combustion air to burn the vents. Liquid in the vent streams to the incinerator is recovered in vent separators prior to entering the incinerator. After burning the vent gasses, steam is generated from the waste heat, and a weak hydrogen chloride acid solution is formed in the HCL Quench tower.

Plant vents are received at 6 knockout pots in the incinerator area with each incinerator having three knockout pots. The pot for one incinerator has a corresponding pot on the other incinerator, which means that the two pots can receive vents with similar compositions. The liquid from the knockout pots is drained to the Incinerator Sample Disposal Pot which, when full, is blown to the Waste Water/EDC Separator Tank.

The vents from the knock out pots are fed to the corresponding incinerator's main burner through a flame arrestor. The flame arrestor prevents flash back from the incinerator to the KO pot. Natural gas is added to the main burner to control the fire box temperature. Each incinerator is equipped with an auxiliary burner, which stabilizes the main burner and uses natural gas.

The hot gas from the fire box passes into a section of the incinerator (Boiler) where heat exchanging tubes are located to recover waste heat in the form of steam. The flue gas passing through the inside of the tubes heats the water on the shell side of the boiler to make the steam. A tank (Steam Drum) is located on top of the incinerator boiler. Its purpose is to receive steam from the boiler, and supply feed water to the boiler.

From the boiler section, the incinerator gases flow into the HCl Tower where HCl is recovered as a weak hydrogen chloride acid solution (10%HCl). The HCl tower also quenches (cools) the gasses. The acid from both incinerator HCl towers is stored in two storage tanks.

The vent from the HCl Tower flows into the Caustic Tower where any unrecovered HCl is neutralized. A continuous flow of caustic solution is circulated through the Caustic Tower countercurrent to the gas flow to prevent HCL gas being sent to the atmosphere. All remaining vent gas passes out the top of the caustic tower and appears as a white plume. Additional personal protective equipment such as vinyl boots, vinyl gloves, and monogoggles are required in the incinerator due to the increased hazard of acid and caustic leaks or sprays. There are acetic acid bottles in the area in the event someone gets caustic on their person. Also, a soda tub is located in the area in the event of personnel acid contamination.

Make a process flow diagram of the incinerator area using a P&ID for reference. Show control valve locations and learn the function of the area and each major piece of equipment.

The following is a list of 900 area equipment names and corresponding numbers

<b>NAME:</b>	<b>NUMBER:</b>
1. Incinerator Blow Down Sump	MS-916
2. High Pressure Wet Vent KO Pot	MS-902A/B
3. Low Pressure Wet Vent KO Pot	MS-903A/B
4. High Pressure Dry Vent KO Pot	MS-905A/B
5. Low Pressure Dry Vent KO Pot	MS-906A/B
6. Incinerator	HF-908A/B
7. Incinerator Boiler	HF-909A/B
8. Incinerator Blower	B-913A/B
9. AA≅ Incinerator HCL Tower	AS-913
10. AA≅ Incinerator Caustic Tower	AS-912
11. AB≅ Incinerator HCL Tower	AS-911
12. AB≅ Incinerator Caustic Tower	AS-910
13. HCL Storage Tank	MF-901A/B
14. Flame Arrestor (MS-903)	BSX-903A/B
15. Flame Arrestor (MS-905)	BSX-905A/B
16. Flame Arrestor (MS-906)	BSX-906A/B
<b>17. PUMPS:</b>	
* AA≅ Incinerator HCL Tower	PP-913A/B
* AA≅ Incinerator Caustic Tower	PP-912A/B
* AB≅ Incinerator HCL Tower	PP-911A/B
* AB≅ Incinerator Caustic Tower	PP-910A/B
* HCL (10%) Transfer Pump	PP-901A/B