



Health File

Interoffice Communication

To D. D. Eoff
From D. W. Linderud
Date June 26, 1975
Subject Draft System for Recharging Caustic Dryers, S-207 A & B
Design No. 33-200-375-DWL
FINAL

Attached is the final design for reducing personnel exposure to VCM during recharging the VCM caustic dryers, S-207 A & B. Also, attached is the new operating procedure for dryer recharging.

The present method of recharging the caustic dryers results in the release of a significant quantity of VCM vapor and is a major personnel exposure problem in the area of the dryers. The high VCM emissions result from the open manway when recharging the dryers and from the discharge of the blower used to prevent caustic dust blowing out the manway.

To reduce the vinyl emissions from the manway during recharging, one of the D.P. way vacuum loaders will be used to pull a draft into the vessel while the manway is open. The vacuum loader will be located at the east end of block I and connected to the dryer outlets with four inch pipe. To reduce the discharge backpressure and the compression ratio across the loader it will discharge to a new four inch vent on the side of the vinyl column.

Caustic fines sucked from the dryer will be removed by the vacuum loader discharge bag filter. The filters are automatically cleaned by back flushing the system with utility air on a timed cycle. The suction line will use a double block arrangement at the outlet of the dryers to eliminate blinding. A pressure gauge on each outlet will be located between the ball valves to indicate valve leakage.

The gas stream through the dryer to the blower can become explosive if vinyl is stripped from the caustic at a rate of 5.5 lbs per min. To make sure this is not a problem, samples on the discharge line will be taken. The caustic dryers were pressure tested at 190 psig and are good for the 230 inches of water vacuum the loader can pull.

The vacuum blower will be moved back to block II before turnarounds to be used for catalyst removal. During the time the vacuum loaders are used in oxy, the dryers will not be recharged. Presently the switch box and starter are not explosion proof. The switch box and starter must be replaced with explosion proof equipment, or nitrogen purged to make it explosion proof.

VVC 000001628

This design is considered an interim solution that will reduce the vinyl concentration in the areas of the dryer. Work is continuing on developing a closed recharging system that will eliminate VCM emissions entirely.

David Linderud

D. W. Linderud

Approved By

Jim Robinson

bw

CC:

JAD-JHM-GGD-DDE(2)-JRH(4)-CEG-PE-HF(2)

VVC 000001629

PROCEDURE FOR RECHARGING THE S-207 DRYERS

- 1) Take dryer off line and blow the liquid into the second dryer with nitrogen.
- 2) Nitrogen purge dryer to S-108 until less than two percent VCM.
- 3) Close the blower's discharge line low point drain valve.
- 4) Open the four inch butterfly atmosphere suction valve in the suction line near the caustic dryers.
- 5) Turn on the vacuum loader, the filter clean air supply, and the vacuum loader dump valve.
- 6) Check pressure gauges between double block for valve leakage and unblock the suction line.
- 7) Unbolt and remove the manway cover and immediately close the vacuum loader atm. valve. This is necessary to minimize VCM emissions from the open manway.
- 8) Recharge dryer.
- 9) Open the vacuum loader atm. valve and immediately close the manway.
- 10) Block in suction line at the caustic dryers.
- 11) Shutdown blower and close atm. valve leaving filter section on.
- 12) Shutdown the vacuum loader filter section and open the discharge line drain valve.

VVC 000001630

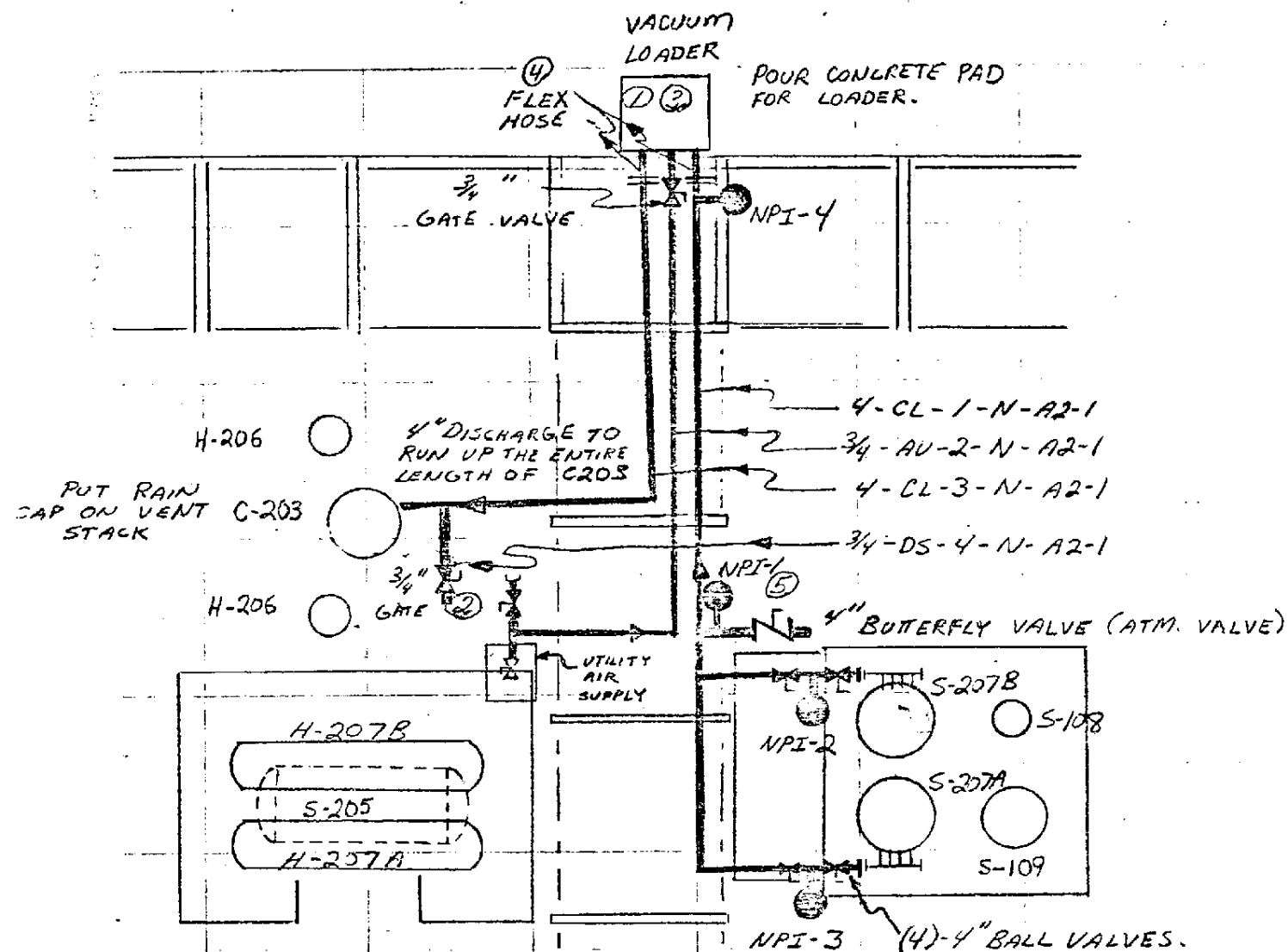


FIGURE I
DESIGN 33-200-375-DWL
DRAFT SYSTEM FOR CAUSTIC
DRYERS, S207 A+B
DWL 04-23-75

NOTES 1-5

1. LOADER TO BE EASILY ACCESSIBLE
2. DRAIN VALVE TO BE EASILY ACCESSIBLE
3. SWITCH BOX AND MOTOR STARTER TO BE EXPLOSION PROOF.
4. USE FLEXIBLE CONNECTIONS BETWEEN BLOWER AND PIPING SYSTEM.
5. BUTTERFLY VALVE TO BE OPERATED FROM GROUND.

VVC 000001631