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CHP 2
File OSHA

Interoffice Communication

To T. G. Swanson
From D. V. Porchey
Date March 29, 1978
Subject VCM EXPOSURE FROM RESIN SHIPMENTS

On January 11, 1978, results were reported regarding the potential VCM exposure of personnel handling Conoco's overseas resin shipments above the OSHA exposure limit of 1.0 ppm. In summary, those results indicated the following:

1. Aberdeen personnel are not being exposed to VCM as a consequence of bagged resin residual VCM.
2. The theoretical potential for exposure by personnel handling bags exists.
3. In actual practice, personnel unloading a truck sealed as typically done for export shipments would not be exposed to VCM above the OSHA action limit of 0.5 ppm.

Recent marketing success have required significant debagging of stored resin. Aberdeen used this opportunity to measure the VCM content of the breathing zone of personnel debagging 50 lots of resin (A report is attached.) These results showed that none of these personnel was exposed above 0.1 ppm, a value far below the OSHA limit. These results lead to the following conclusion:

Personnel bagging, loading, unloading, and debagging Conoco resins in a normal fashion with residual VCM contents less than 1.0 ppmw will not be exposed to VCM above permissible level defined by OSHA. There is, in fact, a high probability that exposure will be well below the 1.0 ppm level.

As a result of plant stripping successes and normal bag storage time, all data were taken with resins containing less than 1 ppm. Insuring bag shipments at this level may require a special shipping specification on bagged resin of 1.0 ppm. This specification may also require plant procedure changes with regard to inventory procedures (delay) or stripping. It is probable that this specification is unnecessarily stringent and could be raised with further monitoring of higher VCM level resins during future debagging operations. Robert Martin is now determining whether or not our bag inventory contains any high RVC material. If it does, and the material is satisfactory from a quality standpoint, personnel will be monitored while adding this resin to the dryblend masterbatch system.

It is my view that no VCM exposures in accordance with OSHA regulations will be incurred during bag handling operations with resins below 1.0 ppm. Additional data should allow us to raise this value.

Dave
D. V. Porchey

clk

cc: FK:HRF:DAK:GGD:CLS:RTF:RBM

CCR 000010591

Mar 74

MAJOR REDUCTIONS IN VCM EXPOSURE ACHIEVED IN 1974

<u>CHANGES MADE</u>	<u>VCM CONCENTRATION (ppm)</u>	
	<u>BEFORE CHANGE</u>	<u>CURRENT</u>
Eliminated manual rinsing of reactors between batches.	10,000	0
Installed enclosure and exhaust system for chem wash screener.	10,000	10
Instituted isolation and purging of reactors before entry for cleaning.	10,000	50-100
Enclosed seal for slurry blend tank exhaust.	8,000	10
Improved vent system on slurry screener.	2,000	10
Improved liquid handling system on knock-out pots in the recovery train.	1,000	5
Reduced leaks around VCM receivers in the recovery area.	2,000	10
Relocated vent on unloading compressors	2,000	1
Installed breathing air system for use in high VCM exposure areas.	-	0

AVERAGE CURRENT VCM CONCENTRATIONS MEASURED BY FIXED POINT MONITORS

<u>AREA</u>	<u>VCM CONCENTRATION (ppm)</u>	
	<u>AVERAGE</u>	<u>MAXIMUM (1)</u>
VCM Unloading	0.3	10+
Reactors	1	10+
Recovery	4	10+
Dryer Room	5	10+
Resin Loading	2	10+
Control Room	0.3	0.7
Warehouse	0.3	0.7
Lab	0.3	0.7
Office	0.3	0.8

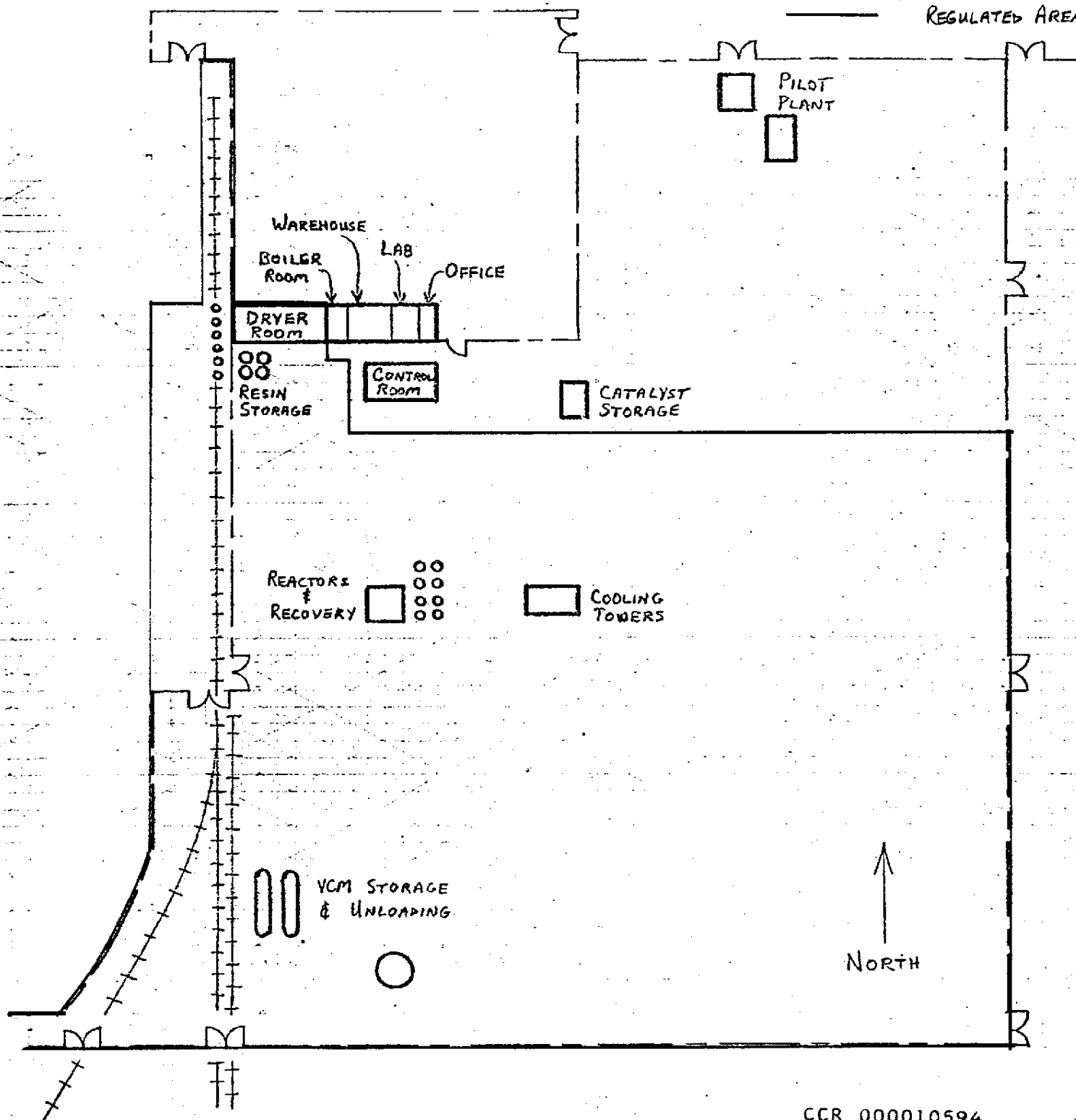
(1) Current range of fixed point monitors is 0-10 ppm.

CCR 000010593

PLOT PLAN OKLAHOMA CITY PVC PLANT

LEGEND

- FENCE
- ++++ RAILROAD
- ⌒ GATE
- _____ REGULATED AREA



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PROJECTS FOR FURTHER REDUCTION OF VCM EXPOSURE LEVELS

<u>PROJECT</u>	<u>BENEFIT</u>
1. Steam stripping of slurry.	1. Reduces VCM content in slurry by 80%.
2. Improve VCM unloading system.	2. Substantially reduces venting of pure VCM to the atmosphere.
3. At least once per month, survey possible points for VCM leakage and make repairs.	3. Reduces VCM leaks from flanges, valve steams, hoses, etc.
4. Install electropolished internals in reactors.	4. Reduces frequency of reactor entries for cleaning.
5. Install automatic level gauging system on resin silos.	5. Eliminates exposures caused by manual gauging.
6. Increase height of M-500 dryer exhaust stack.	6. Eliminates venting of exhaust at resin loading platform.
7. Install pipeline for centrifuge overflow.	7. Removes effluent from open trenches in dryer room.
8. Improve handling of sifter overflow.	8. Encloses resin recycle system.
9. Air purification system.	9. Provides purified air to buildings.
10. Silo aeration.	10. Decreases residual VCM in resin
11. Improve sampling system.	11. Reduces exposures from reactor and dryer sampling.
12. Modified "gas holder".	12. Collects and purifies plant vent streams.
13. Improve culls handling system.	13. Encloses culls collection and handling.
14. Inject polymerization inhibitor into recovery system.	14. Reduces fouling and plugging of recovery equipment.