



DOW CHEMICAL U.S.A.

Mark

July 22, 1983

LOUISIANA DIVISION
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INDUSTRIAL HYGIENE PROGRAM UPDATE
JANUARY 1, 1983 THROUGH JULY 1, 1983

The Industrial Hygiene safety meetings for the Plastics Department have been completed, bringing the I.H. Reporting Index for our department to 100% completion for the year. The meetings were held January through May and covered the I.H. monitoring data for 1982 as well as the control measures and consequences of overexposure for noise, chemicals and dust used in the department. Overall, participation in the meetings was excellent and the many attentive questions and suggestions demonstrated a positive reception towards the program.

Unless indicated otherwise, the I.H. data presented in this report was obtained using a 6-8 hour monitoring period.

The noise exposure data represents the potential average noise dose of the operators in selected job classifications. Keep in mind that these doses are only potential ones, because of the on-going hearing conservation policies of the Department.

Poly A

Potential Noise Exposure

The largest potential dose was 378% of the OSHA 90 db(A) Allowable Noise Dose and was detected on the compressor O.S. job.

<u>Job</u>	<u>Number of Samples</u>	<u>Potential Average Exposure (% of 90 db A)</u>
Extrusion OT	3	67%
Extrusion SOT	2	61%
Compressor SOT	3	137%
Compressor OS	3	170%
Instrument & EDO	1	35%

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POLY B

Potential Noise Exposure

The largest potential dose was 190% of the OSHA 90 db(A) Allowable Noise Dose and was detected on the extrusion OT job.

<u>Job</u>	<u>Number of Samples</u>	<u>Potential Average Exposure (% of 90 db A)</u>
Extrusion OT	2	148%
Extrusion OS	2	80%
Train I & II SOT	2	33%
Train III & IV SOT	2	87%
Day Maintenance	2	20%

Hexane Exposure

The highest concentration that was detected in the operator's breathing zone tests was 6.5 ppm for 390 minutes on the Train I & II SOT job. The threshold limit value (TLV) for N-hexane is 50 ppm.

<u>Job</u>	<u>Number of Samples</u>	<u>Average Exposure</u>
Train I & II SOT	3	3.6 ppm
Train III & IV SOT	2	2 ppm
Purification SOT	2	1 ppm

Potential Exposure to Nuisance Dusts

The threshold limit value (TLV) for HDPE powder and powder form additives used in the plant is 10 mg/m³ total dust.

One test was made on the extrusion area OT job on a day when powder was being removed from the dump hopper. The potential exposure was 1.5 mg/m³ total dust for 390 minutes. A dust mask is required for the dump hopper job to prevent possible overexposure to HDPE powder.

POLY C

Potential Noise Exposure

The largest potential dose was 74% of the OSHA 90 db(A) Allowable Noise Dose and was detected on the outside lab SOT job.

<u>Job</u>	<u>Number of Samples</u>	<u>Potential Average Exposure (% of 90 db A)</u>
OT	3	19%
Reaction SOT	3	29%
Outside Lab SOT	3	33%
Day Maintenance	3	30%

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CPE

Potential Noise Exposure

The largest potential dose was 6% of the OSHA 90 db(A) Allowable Noise Dose and was detected on the Day Maintenance job.

<u>Job</u>	<u>Number of Samples</u>	<u>Potential Average Exposure (% of 90 db A)</u>
Day Maintenance	2	3%

Hydrochloric Acid Vapor Exposure

The threshold limit value (TLV) for HCl vapors is 5 ppm. The highest concentration that was detected in the outside SOT breathing zone tests was 1.1 ppm for 404 minutes.

<u>Job</u>	<u>Duration of Samples</u>	<u>Exposure To HCL 90</u>
Outside SOT	410 minutes	.9 ppm
Outside SOT	360 minutes	< .2 ppm (detection limit)
Outside SOT	230 minutes	< .3 ppm (detection limit)
Outside SOT	404 minutes	1.1 ppm

Area Tests for Hydrochloric Acid Vapors

Four tests were made in the Train II wash column ditch area. The highest concentration that was detected was .9 ppm for 279 minutes.

<u>Duration of Samples</u>	<u>Concentration Detected</u>
240 min.	< .2 ppm (detection limit)
279 min.	.9 ppm
175 min.	< .4 ppm (detection limit)
300 min.	.7 pm

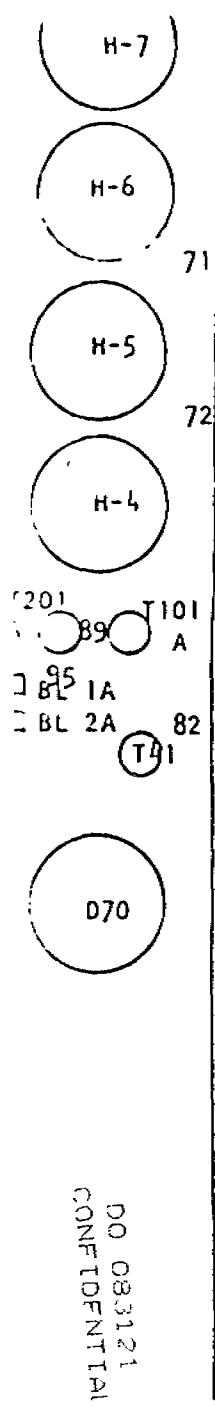
Chlorine Dosimeter Breathing Zone Tests

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The OSHA exposure limit for chlorine is 1 ppm (peak exposure). The largest potential peak exposure was 12.50 ppm and was detected on the outside SOT job. During this test, the operator broke into a reactor line using full face mask breathing air. The largest 15 minute dose was .40 ppm and the average dose for 362 minutes was 0.00 ppm.

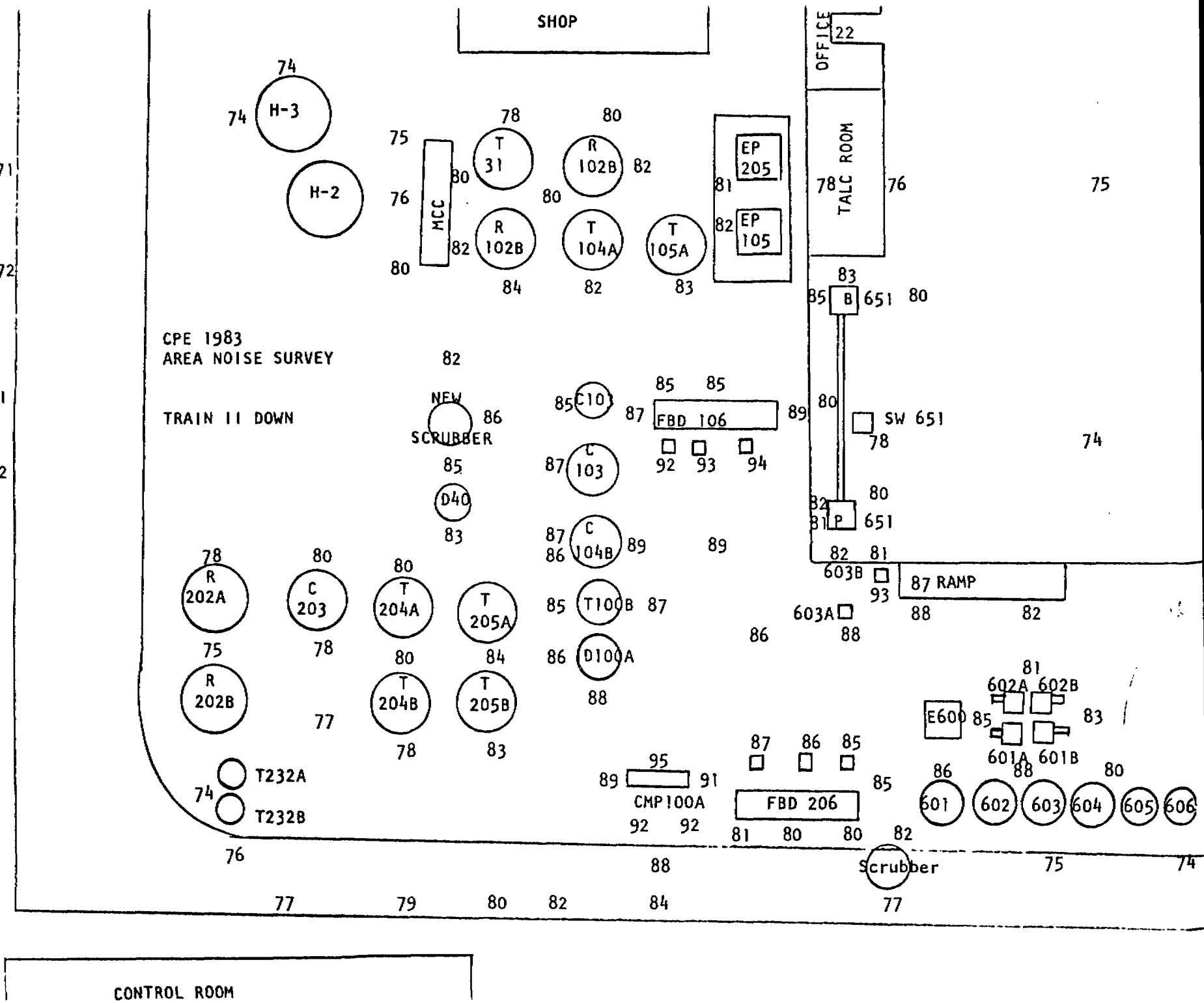
<u>Job</u>	<u>Duration of Samples</u>	<u>Highest Peak Exposure</u>	<u>Highest 15 min. Exposure</u>	<u>TWA</u>	<u>No. of Peaks <.5 ppm</u>
Outside SOT	254 min.	2 ppm	.06 ppm	0.00 ppm	1
Outside SOT	389 min.	.85 ppm	.06 ppm	0.00 ppm	1
Outside SOT	423 min.	3.45 ppm	.18 ppm	0.00 ppm	4
Outside OST	362 min.	12.5 ppm	.4 ppm	0.00 ppm	4

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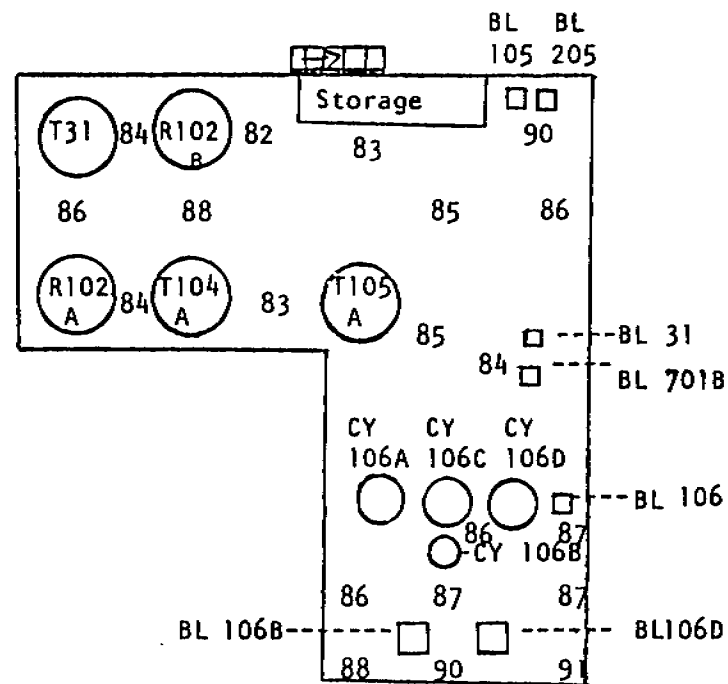


CPE 1983
AREA NOISE SURVEY

TRAIN 11 DOWN



TRAIN I - UPSTAIRS



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PMS - POLY A/B WAREHOUSE

Potential Noise Exposure

The largest potential dose was 57% of the OSHA 90 db(A) Allowable Noise Dose and was detected on the OT car loader job.

<u>Job</u>	<u>Number of Samples</u>	<u>Potential Average Exposure (% of 90 db A)</u>
Laborer	2	31%
Car Loader	2	56%

Potential Exposure to Nuisance Dusts

The threshold limit value (TLV) for nuisance dust is 10 mg/m³ total dust. These tests were conducted on the OT car loader while cleaning the transfer blower's sock filters. The highest concentration detected was 22.9 mg/m³ total dust for 15 minutes. A dust mask is required for this job to prevent possible overexposure to polyethylene dust.

<u>Job</u>	<u>Duration of Sample</u>	<u>Potential Exposure (Total Dust)</u>
OT Car Loader	15 min.	8.8 mg/m ³
OT Car Loader	15 min.	22.9 mg/m ³

Carbon Monoxide Exposure

The threshold limit value (TLV) for carbon monoxide is 50 ppm. One test was conducted on the truck loading job. The exposure was 9.3 ppm for 335 minutes.

PMS - POLY C WAREHOUSE

Potential Exposure to Noise

The largest potential dose was 131% of the OSHA 90 db(A) Allowable Noise Dose and was detected on the OT car loading job.

<u>Job</u>	<u>Number of Samples</u>	<u>Potential Average Exposure (% of 90 db A)</u>
Laborer	4	22%
OT Car Loader	2	117%

Carbon Monoxide Exposure

Two tests were made on the towmotor operator. The results of both tests were less than the 2.6 ppm detection limit for 235 minutes.

PMS - CPE WAREHOUSE

Potential Exposure To Noise

One test was made on the laborer working the bagging line. The potential exposure was 62% of the OSHA 90 db(A) Allowable Noise Dose.

Non-Asbestos Form Talc Exposure

The threshold limit value (TLJV) for non-asbestos form talc is 3 mg/m³ respirable dust and 6 mg/m³ non-respirable dust. One breathing zone test was made on the laborer working the bagging line. The exposure was .6 mg/m³ respirable dust and .2 mg/m³ non-respirable dust.

Area Test For Non-Asbestos Form Talc

Two area tests were made to determine if the amounts of non-asbestos form talc being released from the bag compactor were excessive. Both of the tests showed that the concentrations of non-asbestos form talc in the bag compactor area were below the threshold limit value (TLV). A new dumpster for the bag compactor has since been installed to eliminate the dust releases.

<u>Duration of Test</u>	<u>Concentration Detected</u>	
	(Resp.)	(Non-Resp.)
425 min.	< .1 mg/m ³	.6 mg/m ³
370 min.	.5 mg/m ³	1.2 mg/m ³

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