

File

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LOUISIANA DIVISION INDUSTRIAL HYGIENE REPORT
AN OPERATING UNIT OF THE DOW CHEMICAL COMPANY

<u>DEPARTMENT</u>	<u>FILE NUMBER</u>	<u>DATE</u>
CELLULOSE	LAD-CELLU-86.01	1/27/87
<u>TITLE</u>		

CELLULOSE INDUSTRIAL HYGIENE SURVEY, 1986

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SUMMARY/RECOMMENDATIONS

CELLULOSE EMPLOYEES HAVE A LIKELIHOOD FOR EXPOSURE TO METHYL CHLORIDE, PROPYLENE OXIDE, DIMETHYL ETHER, NOISE AND DUST. PERSONNEL SAMPLES OBTAINED FROM AN S.O.T. SHOWED A HIGH EXCURSION VALUE FOR PROPYLENE OXIDE OF 109 PPM DURING A SAMPLE CATCHING OPERATION. THE LIMIT IS 100 PPM. THERE ARE ALSO SOME AREAS OF THE PLANT WHERE OPERATORS ARE EXPOSED TO HIGH NOISE LEVELS. THESE AREAS ARE CLEARLY MARKED AND HEARING PROTECTION IS WORN. ALL SOURCES OF ORGANICS ARE BEING LOOKED AT AND CHANGES MADE TO ELIMINATE THEM ARE PLANNED.

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CONCLUSIONS AND RECOMMENDATIONS

1. THE HIGH EXPOSURE TO PROPYLENE OXIDE OF 109 PPM DURING A SAMPLE CATCHING JOB WAS THE ONLY HIGH EXPOSURE SHOWN FOR METHYL CHLORIDE, PROPYLENE OXIDE OR DIMETHYL ETHER DURING EITHER PERSONNEL OR EXCURSION MONITORING. THE EXCURSION LEVEL FOR PO IS 100 PPM. THIS EXPOSURE WAS PROBABLY DUE TO THE NECESSITY OF BLEEDING DOWN THE SAMPLE BOMB TO ATMOSPHERE TO ENSURE CATCHING A GOOD SAMPLE. THERE ARE PROJECTS BEING PLANNED TO MAKE THIS A CLOSED LOOP SYSTEM.
2. ALL HIGH NOISE AREAS IN THE PLANT ARE CLEARLY MARKED WITH HEARING PROTECTION SIGNS. THE GRINDER AREA HAS BEEN ISOLATED BY WALLS THAT ENCLOSE THE ENTIRE OPERATION. HEARING PROTECTION IS REQUIRED TO ENTER THIS AREA.
3. EXPOSURE TO DUST WAS EVALUATED BY USING A DIRECT READING HAM DUST/AEROSOL MONITOR AND WAS CONDUCTED BY AN INDUSTRIAL HYGIENE REPRESENTATIVE. THE TESTING WAS DONE IN THE WAREHOUSE WHERE MOST OF THE DUSTING CONDITIONS OCCUR. THE DATA SHOWS NO REAL PROBLEMS WITH THE EXCEPTION OF THE ONE INSTANCE WHERE AN OPERATOR BLEW HIS CLOTHES OFF WITH AN AIR HOSE. THE DUST CONCENTRATIONS OF 2.3 TO 4.5 MG/M³ RESPIRABLE CAME VERY CLOSE TO THE MAXIMUM.

1987 PLANS

1. CONTINUE TO DO PERSONNEL MONITORING FOR METHYL CHLORIDE, PROPYLENE OXIDE AND DIMETHYL ETHER. WE WILL DO SOME AREA MONITORING FOR THESE CHEMICALS TO ESTABLISH SOME CONCENTRATION GRIDS FOR THE BLOCK.
2. PERSONNEL NOISE MONITORING WILL CONTINUE. NOISE LEVEL GRIDS WILL BE DETERMINED FOR THE BLOCK TO ENSURE THAT NO NEW HIGH NOISE LEVEL AREAS HAVE BEEN CREATED.
3. DUST MONITORING WILL BE DONE MORE ON A PERSONNEL MONITORING CRITERIA TARGETING SPECIFIC JOBS. THIS DATA SHOULD ALLOW US TO EXAMINE EACH JOB WITH REGARD TO EXPOSURE LEVELS AND PROTECTIVE EQUIPMENT NEEDED.
4. OUR PLANS ARE TO PURSUE A MORE COMPLETE AND COMPREHENSIVE INDUSTRIAL HYGIENE PROGRAM FOR THE INDIVIDUAL EMPLOYEES AND FOR THE GENERAL PLANT AREAS.

ORGANIC EXPOSURE EVALUATION

THE IHG LIMITS FOR THE ORGANICS TESTED ARE LISTED BELOW:

	8 HR TWA	EXCURSION
METHYL CHLORIDE	25 PPM	75 PPM
PROPYLENE OXIDE	20 PPM	100 PPM
DIMETHYL ETHER	400 PPM	

A DUPONT MODEL P200A AIR MONITOR WAS USED TO COLLECT ALL SAMPLES. THE CHARCOAL TUBES WERE REFRIGERATED UNTIL ANALYSIS.

DUST EXPOSURE EVALUATION

THE DUST EXPOSURE TESTING WAS CONDUCTED BY INDUSTRIAL HYGIENE USING A DIRECT READING HAM DUST/AEROSOL MONITOR. THE LIMITS FOR DUST ARE AS FOLLOWS:

	TOTAL	RESPIRABLE
ALPHA CELLULOSE	10 MG/M ³	5 MG/M ³
METHOCEL	10 MG/M ³	5 MG/M ³

NOISE EXPOSURE EVALUATION

NOISE EXPOSURE READINGS WERE TAKEN USING THE DUPONT MK-2 AUDIO DOSTMETER. ALL SAMPLES TAKEN WERE PERSONNEL SAMPLES. THE COMPLETE DATA IS SHOWN IN THE TABLES.



RANDY NORMAND
CELLULOSE PRODUCTS PLANT

ATTACHMENTS

SGL

PERSONNEL NOISE MONITORING DATA

DATE	12-17-86	12-17-86	12-18-86	12-15-86
NAME	D. BERTHELOT	H. TAYLOR	B. RANSON	R. HERNANDEZ
MASTER #	432618	432455	432341	433703
JOB ASSIGNMENT	O. MAINTENANCE	WASH S.O.T.	O. MAINTENANCE	PACK S.O.T.
TIME	7:54	7:55	7:47	7:50
STANDBY				
DOSE %	✓ 58.3	138.0	45.1	50.8
L AVG.	86.2	92.4	84.5	85.3
DOSE % #2	27.5	117.2	28.1	26.1
L AVG. #2	80.8	91.3	81.1	80.5
S.L.M.				
L MAX.	118.4	OFL	119.1	122.9
L MAX. TIME	3:41	7:51	1:34	6:37
L MAX. #2	120.8	OFL	120.5	124.3
DOSE, TIME	58.6	139.6	46.4	51.6
>115 DB, TIME	0:00	7:51	1:34	4:17
COMMENTS		HEARING PROTECTION WORN	HEARING PROTECTION WORN	

PERSONNEL NOISE MONITORING DATA

DATE	12-15-86	12-16-86	12-16-86	2-25-86
NAME	K. MULANAX	M. ARMSTRONG	A. LEE	G. YOUNG
MASTER #	282457	433346	431932	433394
JOB ASSIGNMENT	WASH S.O.T.	GRINDER O.T.	OUTSIDE O.S.	PACKAGING S.O.T OPER. METHOCEL PACKAGING MACH.
TIME	8:00	7:51	8:11	7:44
STANDBY				
DOSE %	✓ 165.0	296	68.4	72.6
L AVG.	93.6	98.0	87.1	87.9
DOSE % #2	149.7	280	50.2	48.4
L AVG. #2	92.9	97.6	84.9	85.0
S.L.M.				
L MAX.	129.9	OFL	122.8	129.5
L MAX. TIME	0:59	0:11	6:35	2:57
L MAX. #2	130.8	OFL	125.3	134.8
DOSE, TIME	164.8	300	66.8	74.8
>115 DB, TIME	0:09	0:18	6:35	1:43
COMMENTS	USING AIR HOSE HEARING PROT. WORN	OPENED FEED THROATS ON GRIND. HEARING PROT. WORN.		HEARING PROT. WORN

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PERSONNEL NOISE MONITORING DATA

DATE	2-25-86	2-27-86	2-27-86	3-25-86
NAME	JOEY JUSTICE	BRIAN SISK	S. OSTERBERGER	H. RUSSELL
MASTER #	280408	279759	432462	432926
JOB ASSIGNMENT	GRINDER O.T. CELLULOSE GRINDERS STOCK & RUNNING	WASH O.T. REACT. WORK & FILT. CATCH SAMPLES	WASH S.O.T. REACT. MONITOR AND CATCH SAMPLES	LAB S.O.T.
TIME	6:58	7:30	7:33	7:49
STANDBY				
DOSE %	66.0	91.0	70.6	7.4
L AVG.	88.0	89.8	87.9	71.4
DOSE % #2	49.7	69.9	56.2	5.0
L AVG. #2	86.0	87.9	86.3	68.7
S.L.M.				
L MAX.	127.3	OFL	115.3	112.9
L MAX. TIME	3:19	1:56	2:53	5:35
L MAX. #2	140.8	OFL	116.3	115.0
DOSE, TIME	75.6	96.4	74.8	7.6
>115 DB, TIME	6:35	1:12	0:00	0:00
COMMENTS	HEARING PROT. WORN			

PERSONNEL NOISE MONITORING DATA

DATE	3-25-86			
NAME	JOHN LAFLEUR			
MASTER #	430975			
JOB ASSIGNMENT	MAINTENANCE SUPERVISOR			
TIME	5:13			
STANDBY				
DOSE %	6.5			
L AVG.	73.4			
DOSE % #2	2.8			
L AVG. #2	67.4			
S.L.M.				
L MAX.	112.1			
L MAX. TIME	0:54			
L MAX. #2	115.8			
DOSE, TIME	10.0			
>115 DB, TIME	0:00			
COMMENTS				

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DUST MONITORING DATA

CELLULOSE WAREHOUSE

	<u>MG/M³</u>
INSIDE N.W. DOOR	0.01 - 0.017
N. SIDE OF VALVE BAGGER	0.012 - 0.008
N. WALKWAY	0.003
N.E. CORNER INSIDE DOOR	0.004
END OF VALVE BAGGER CONVEYOR	0.002 - 0.004
S. OF VALVE BAGGER LINE	0.005
AT VALVE BAGGER	0.007
BESIDE POWER CABINET	0.01 - 0.015
GENERAL WAREHOUSE S. OF BAGGING AREA	0.010 - 0.015

OPERATOR USING AIR HOSE TO BLOW CLOTHES AND EQUIPMENT OFF

5 FEET AWAY	2.3 - 4.5
1 MINUTE LATER	0.8 - 1.0
2 MINUTES LATER	0.04 - 0.05