

CONCLUSION AND RECOMMENDATION

1. FIFTY TWO (52) PERSONNEL SAMPLES FOR POTENTIAL ASBESTOS EXPOSURE WERE COLLECTED DURING THE FIRST HALF OF 1986. THE HIGHEST POTENTIAL EXPOSURE OCCURRED DURING HAND BRUSHING OF COPPER CATHODES. THE PROCEDURE WAS MODIFIED TO ELIMINATE DRY BRUSHING. THIS RESULTED IN POTENTIAL EXPOSUREES BEING REDUCED TO LESS THAN 0.01 - 0.02 FIBERS/CC.
2. ONE INDIVIDUAL WAS FOUND TO CONSISTENTLY HAVE THE HIGHEST POTENTIAL ASBESTOS EXPOSURE DURING PULP MIXING. THE PROPER PROCEDURES FOR THIS JOB WERE REVIEWED WITH THIS PERSON WITH AN EMPHASIS ON PROPER WETTING TECHNIQUE. IT IS RECOMMENDED THAT THE PROPER PROCEDURE FOR MIXING PULP BE REVIEWED SEVERAL TIMES PER YEAR WITH THE PEOPLE PERFORMING THIS JOB.
3. ONE HUNDRED AND FOUR (104) PERSONNEL SAMPLES WERE COLLECTED DURING THE "INITIAL MONITORING" REQUIRED BY THE REVISED ASBESTOS STANDARD. THREE SAMPLES WERE ABOVE THE ACTION LEVEL BUT NONE WERE ABOVE THE PERMISSIBLE EXPOSURE LIMIT. TWO SAMPLES WERE FURTHER ANALYZED BY SCANNING ELECTRON MICROSCOPY. ONE SAMPLE CONTAINED INORGANIC AND ORGANIC "FIBERS" AND THE OTHER CONTAINED CELLULOSE FIBERS. NEITHER CONTAINED ANY ASBESTOS FIBERS. IN THE FUTURE WHEN ANY RESULTS ARE ABOVE THE ACTION LEVEL OR PERMISSIBLE EXPOSURE LIMIT, CONSIDERATION SHOULD BE GIVEN TO HAVING AN SEM ANALYSIS PERFORMED TO DETERMINE WHETHER OR NOT THE "FIBERS" ARE ASBESTOS.
4. EFFORT SHOULD CONTINUE TOWARD THE USE OF ENGINEERING CONTROLS OR PROCEDURE MODIFICATIONS TO FURTHER ELIMINATE POTENTIAL EXPOSURES TO ASBESTOS.
5. AREA NOISE MONITORING DATA INDICATED THERE WERE NO CHANGES IN THE NOISE LEVELS IN THE CELL SERVICE BLOCK. ALL HIGH NOISE LEVEL AREAS ARE PROPERLY POSTED WITH THE REQUIRED WARNING SIGNS.
6. THE PROCEDURE USED FOR MIXING THE DERAKANE SOLUTION AND VARIOUS ADDITIVES WAS REVIEWED AND IT WAS JUDGED THAT NO EXPOSURE SAMPLING WAS REQUIRED. ONLY SMALL AMOUNTS OF THE CHEMICALS ARE USED AND ONLY ON AN INFREQUENT BASIS. THE MIXING IS CARRIED OUT IN A VENTILATED ENCLOSURE. EDUCATION ON THE HAZARDS OF THE CHEMICALS AND USE OF PROTECTIVE EQUIPMENT IS DONE ON A ROUTINE BASIS.

SAMPLING PLANS FOR 1987

ALL JOBS IN THE CELL SERVICE BLOCK WILL BE SAMPLED AT LEAST ONE TIME DURING THE YEAR FOR ASBESTOS EXPOSURE. JOBS THAT HAVE THE HIGHEST POTENTIAL EXPOSURE WILL BE SAMPLED SEMI-ANNUALLY. THESE JOBS INCLUDE:

MIXING PULP

HOOKING UP CATHODES AND DUMPING ASBESTOS

CLEANING COPPER CATHODES

DRAWING CATHODES

OPERATING CATHODE WASHER AND RECOVERY SYSTEM

CLEANING ANODES

JANITORIAL OPERATIONS

JOBS INVOLVING WORK IN HIGH NOISE AREAS WILL BE MONITORED USING PERSONNEL AUDIODOSIMETERS.

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GOALS FOR 1987

1. INSTALLTION OF HEPA VACUUM STATIONS AND BOOT WASHERS TO UPGRADE DECONTAMINATION FACILITIES.

2. UPGRADE ASBESTOS DEBAGGING EQUIPMENT:

WORK IS UNDERWAY TO MODERNIZE THE BELTYNE DEBAGGER SO IT WILL OPERATE WITHOUT OPERATOR ASSISTANCE.

3. REDUCE POTENTIAL ASBESTOS EXPOSURE DURING PULP MIXING OPERATION:

INVESTIGATE USE OF AN AUTOMATIC DEBAGGER TO OPEN ASBESTOS BAGS FOR THIS OPERATION.

CONSIDER USE OF A CLOSED AGITATED VESSEL TO MIX ASBESTOS PULP SLURRY.

4. INSTALL A SCREW CONVEYOR SYSTEM TO REMOVE ACCUMULATED ASBESTOS OUT OF THE CATHODE WASHER SUMP.

INDUSTRIAL HYGIENE SURVEY, 1986

ASBESTOS EXPOSURE EVALUATION

THE OSHA PERMISSABLE EXPOSURE LIMIT FOR ASBESTOS IS 0.2 FIBERS/CC (GREATER THAN 5 MICRONS IN LENGTH) AS AN EIGHT HOUR TIME WEIGHTED AVERAGE. THE ACTION LEVEL IS 0.1 FIBERS/CC.

ASBESTOS SAMPLES WERE COLLECTED USING A 25 MM DIAMETER MIXED CELLULOSE ESTER MEMBRANE FILTER IN AN OPEN FACED CASSETTE WITH A 50 MM EXTENSION COWL. AN AIR FLOW RATE OF APPROXIMATELY 2.0 LITERS PER MINUTE IS OBTAINED USING A GILIAN MODEL HFS113A OR DUPONT MODEL P 2500 BATTERY POWERED PUMP. THE SAMPLES ARE ANALYZED AT AN AIHA ACCREDITED LABORATORY. SAMPLING PUMPS ARE CALIBRATED BEFORE AND AFTER EACH SAMPLE IS COLLECTED. THIS IS THE NIOSH 7400A METHOD AS DESCRIBED IN APPENDIX A OF THE REVISED ASBESTOS STANDARD, 29CFR 1926.58.

THE RESULTS OF THE ASBESTOS MONITORING ARE FOUND IN ATTACHMENT 1 AT THE END OF THIS REPORT. ONE HUNDRED FIFTY SIX (156) PERSONNEL SAMPLES AND THIRTY SEVEN (37) AREA SAMPLES WERE COLLECTED. NO PERSONNEL OR AREA SAMPLES COLLECTED AFTER THE REVISED ASBESTOS STANDARD TOOK EFFECT WERE FOUND TO BE ABOVE THE PERMISSIBLE EXPOSURE LIMIT. AS A RESULT THERE ARE NO "REGULATED AREAS" IN THE CELL SERVICE BLOCK. THE ASBESTOS STORAGE ROOM, WHICH INCLUDES THE PULP MIXING OPERATION, WILL CONTINUE TO BE A RESTRICTED ACCESS AREA REQUIRING FULL PROTECTIVE EQUIPMENT FOR ANYONE ENTERING. THE ASBESTOS STORAGE AREA IN THE CHLORINE PLANT WAREHOUSE WHICH IS CONTROLLED BY CELL SERVICE PERSONNEL WILL ALSO BE A RESTRICTED ACCESS AREA.

NOISE EXPOSURE EVALUATION

AN AREA NOISE SURVEY WAS CONDUCTED USING A B&K MODEL 2205 HAND HELD SOUND LEVEL METER. IT WAS CALIBRATED USING A B&K TYPE 4230 AUDIO CALIBRATOR WHICH EMITS A 94 DB SOUND AT 1000 HZ. ALL MEASUREMENTS WERE TAKEN USING THE A-WEIGHTED SCALE IN THE SLOW RESPONSE MODE. THE RESULTS OF THE SURVEY ARE SHOWN ON THE BLOCK DIAGRAM IN ATTACHMENT 2 AT THE END OF THIS REPORT.