E. I. DU PONT DE NEMOURS & COMPANY

WILMINGTON, DELAWARE 19898

ENGINEERING DEPARTMENT

(14)

Memo #1

CC: L. C. Schaller-Emp. Rel.-Wilm.
D. J. Beatty - Cent. Res. - Exp. Sta.
R. W. Calhoun - Tex. Fib - Seaford Pl
J. T. Cavanaugh-Pigments-Edge Moor Pl
F. H. Dineen - Elchem - Wilmington
E. B. Hall - Design
R. B. Whitaker-Plastics-Victoria Plt.
H. Lewis-Explosives-Carney's Point
W. T. Muncaster - Elaschem - Wilmingt
W. S. Person-Orchem-Chambers Works
W. H. Thompson - F & F - Parlin Plant
P. A. Palmer - ESD
I. Zeise - Construction

Refer to Serial Letter 4013
Dated November 8, 1971

December 20, 1971

TO: D. G. WINDSOR - CHAIRMAN - EMP. REL. - WILMINGTON

FROM: D. M. ISIMINGER - STANDARDS SECTION

STANDARDS SECTION - SAFETY & FIRE PROTECTION SUBCOMMITTEE
S4T - MEASUREMENT AND CONTROL OF ASBESTOS DUST EXPOSURE

Our request to the Engineering Standards Committee for approval of the above standard has brought the following comments:

APPROVALS: H. B. Eaton, Elaschem; J. C. Breckenridge, Emp. Rel.; R. H. Kohl, F & F; C. W. Andrus, International; R. H. McConnell, Pigments; R. W. Beach, Purchasing

NO REPLIES TO DATE: R. E. Robbins, Central Research; W. M. Davis, Elchem; C. S. Eller, EM & ID; C. D. Brown, Construction; F. J. Martin, ESD; W. E. Neff, Film; K. W. Dahl, Plastics; R. H. Gruss, Remington Arms

NOTED - NOT QUALIFIED TO COMMENT: R. F. Stewart, Design; J. P. Klimowicz, ESD

COMMENTS AND/OR SUGGESTIONS:

G. S. REEDER, JR., COMMENTS BY J. PAVLOSKI/R. FISHER - EXPLO. - REPAUNO WKS.

COMMENT NO. 1 - Will this concept be extended to all insulating materials and not limited to just asbestos? Many insulations contain no asbestos but are dusty and fibrous. Insulations containing silica, although less toxic, can cause silicosis and chronic lung disease. 242

COMMENT NO. 2 - In paragraph 2.2, spray asbestos for insulation and fireproofing should be added as this is discharged directly from a hose to the atmosphere. Contractors sometimes do this work at Plant sites and adequate isolation of the area is advisable.

W. A. PARMAN, COMMENTS BY J. A. FLATTMANN - I & B - GRASSELLI PLANT

COMMENT NO. 1 - Will probably have to incorporate some of this into Plant Safety Instruction.

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PLAINTIFF'S EXHIBIT
DUP-181

COMMENT NO. 15 - Change 5.2 as follows: "Clothes must be kept free of dust accumulation. Clothes contaminated with dust shall be vacuum-cleaned before taking them off. Avoid breathing asbestos dust when removing clothe Being more specific at this point is desirable.

J. A. SIGMAN, COMMENTS BY W. R. CLARK - TEX. FIB. - SEAFORD PLANT

COMMENT NO. 16 - 3.1.2 - Omit.

COMMENT NO. 17 - 3.1.3 - Include vacuum or respiratory protection. Should be done only if sample analyses so indicate.

COMMENT NO. 18 - 3.1.5 - Do not agree - Use of vacuum cleaner to clean up workbench. Use of plastic bag okay, but question value of wetting bag unless done continually. This is not practical.

COMMENT NO. 19 - 3.2.1 - Recommend use of respirator with or without exhaust system.

COMMENT NO. 20 - 3.2.3 - Assume portable vacuum cleaners are acceptable.

COMMENT NO. 21 - 3.3.1 - Why not eliminate use of asbestos cement? Use Power House cement, which contains no asbestos.

COMMENT NO. 22 - 3.4.1 - Do not recommend wetting down. Do recommend vacuum before removal and for job cleanup.

COMMENT NO. 23 - 5.2 - Intent good - but how and to what extent?

COMMENT NO. 24 - Add - where dust problem exists. (5.3)

COMMENT NO. 25-6.1.1-Full 8hr shift not necessary - one hour is sufficient.

J. A. SIGMAN, COMMENT BY B. R. BOLTON - TEX. FIB. - MARTINSVILLE PLANT

COMMENT NO. 26 - 6.1.1 - Question need for sampling each operation for a full 8-hour shift monthly. Many operations are not continuous and 8-hour sampling is impractical. Also, sampling can show that TLV limits have never been exceeded in a particular operation. Some samples should be taken monthly others semi-annually or annually.

J. A. SIGMAN, COMMENTS BY P. F. PHILYAW - TEX. FIB. - WAYNESBORO PLANT

COMMENT NO. 27 - 3.2.1 - Asbestos dust does not precipitate readily in cyclone collectors. A bag filter for asbestos dusts should be required.

COMMENT NO. 28 - 5.3 - Adherence to this item will create problems in that alternate facilities must be provided which will result in lost time from the job. Unless there is a clear need for this item, it should be deleted.

J. A. SIGMAN, COMMENTS BY J. M. MARTIN - TEX. FIB. - CHATTANOOGA PLANT

COMMENT NO. 29 - Not necessary to isolate power cutting equipment in a separate work area if adequate exhaust system is provided.

DUP 0901812

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COMMENT NO. 30 - Not necessary to wet insulation when emptying cyclone if discharged into a plastic bag and sealed.

COMMENT NO. 31 - Prefer to wear protective equipment when stripping insulation rather than wetting so that insulation can be reused.

COMMENT NO. 32 - Question necessity of extensive daily clean-up; good judgement should be exercised for frequency of clean-up.

COMMENT NO. 33 - Asbestos-cement should be avoided whenever possible.

J. A. SIGMAN, COMMENTS BY W. M. READING - TLX. FIB. - KINSTON PLANT(DISAPP.

COMMENT NO. 34 - In general, we believe that the standard is basically good but unrealistic. We would, at best, require a major modification of our equipment and procedures to comply.

COMMENT NO. 35 - 3.1.2 - Insulation is lifted from boxes and cartons put in trash dumpster.

COMMENT NO. 36 - Neither vacuum or mask are believed to be necessary.(3.1.3

COMMENT NO. 37 - Would like to know where to purchase and what type of insulation is available. We cannot accept Unibestos. (3.1.4)

COMMENT NO. 38 - 3.1.5 - We are not using a plastic bag or wetting the scrap because of slipping hazards and housekeeping problems that would be created. We frequently brush waste from table top into paper drum for disposal and do not allow accumulations to build up.

COMMENT NO. 39 - 3.2.1 - Our saws are not isolated, but we have not been above the PEL in our tests. Our exhaust system performs very well; however, the dust is not wet down. Adjacent carpenter shop's outside exhaust system is tied into same system. Contents from cyclone drop into closed dumpster. Some fibers are lost in cyclone air exhaust outside of the building.

COMMENT NO. 40 - 3.2.3 - The ledges, lights, inside of storage bins are cleaned on a weekly schedule. Other parts of work area are cleaned daily or more frequently.

COMMENT NO. 41 - 3.2.4 - We are using Mine safety air sampling pump with the Millipore filter type Aerosol Cat. # MAWG037A0 pore size .8. The pump is battery powered.

COMMENT NO. 42 - 3.3.1 - We are using Eagle-Picker Super 66 which conforms to Commercial Standard C.S. 117-49 issued by U.S.D.C.

COMMENT NO. 43 - 3.3.2 - Would like to know where this type of cement could be purchased.

COMMENT NO. 44 - 3.4.1 - Impractical; would create a slipping hazard. Also, impossible to protect electrical equipment. There is little liklihood that this would be done unless a most elaborate and unusual precautionary procedure was followed.

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COMMENT NO. 45 - 3.4.2 - We are barricading the work area to keep people out. A certain amount of dust inevitably drifts outside of the roped off enclosure. Infrequent large removals have created considerable dust at times.

COMMENT NO. 46 - 3.4.3 - We are putting our scrap insulation in boxes and cans but not wetting it down, nor do we believe it necessary to do so.

COMMENT NO. 47 - 4.1.1 - We do not believe this is necessary, but the information is pertinent.

COMMENT NO. 48 - 5.2 - The men wear coveralls when working; however, nothir is being done to keep them free of dust other than a brushing off from time to time. The statement is ambiguous.

COMMENT NO. 49 - 5.3 - We have not insisted on this. Practical enforcement is questionable.

COMMENT NO. 50 - 6.1.1 - We are taking 2-eight-hour samples monthly as a check and for historical file.

COMMENT NO. 51 - 6.1.3 - Samples are sent to Felix Stein, Department of Occupational Health, University of Pittsburgh.

37 J/ A. SIGMAN, COMMENTS BY A. FAITSCH - TEXTILE FIBERS - UENTROP WORKS

COMMENT NO. 52 - 2.3 - Standard 527 should be in conformity to the latest threshold limit values (TLV's) or to the limits of German authorities (Staubforschungsinstitut).

COMMENT NO. 53 - 2.4 - Sample for asbestos fiber analysis may be obtained by using an instrument as it is used by German authorities (Staubforschungsinstitut), i.e. Konimeter.

COMMENT NO. 54 - 3.1.5, 3.4.1 - Design of proposed work table is required.

COMMENT NO 55 - 3.1.5, 3.4.1 - Dust should be eliminated through vacuum system. Wetting seems not to be successful because fine dust cannot be absorbed through water and will reduce the effect of the cyclone.

COMMENT NO. 56 - 3.2.1, 3.4.1 - Working area should have a little vacuum in order to keep the adjointed areas free of dust.

COMMENT NO. 57 - 3.2.1, 3.4.1 - Exhaust system should have provision of keeping work place free of dust.

COMMENT NO. 58 - 3.2.1, 3.4.1 - Dust should not be wetted (see 3.1.5). Dust collecting bag should be closed and thrown away. Vacuum system should be designed for using one-way-bags.

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COMMENT NO. 59 - 3.3.2 - Not possible because the whole quantity cannot be used at any time.

COMMENT NO. 60 - 3.4.1 - Insulation will be used more than one time. Wet insulation cannot be used. Insulation with finish is water-resistant.

COMMENT NO. 61 - 3.4.2 - Which dimension should the area have?

COMMENT NO. 62 - 3.4.3 - Area should be cleaned with vacuum system. Water should not be used.

COMMENT NO. 63 - 3.4.5 (New) - If possible transportable work-table with vacuum system should be used for working in the areas.

COMMENT NO. 64 - 5.3 - Gum or eating-tabacco can be consumed in working areas because breath-way will be kept wet. No smoking. No food.

COMMENT NO. 65 - 6.1.1 - Sampling should be carried out for a monthly shorter time.

COMMENTS MADE BY E. B. HALL - DESIGN - LOUVIERS

COMMENT NO. 66 - Suggest paragraph 3.1.3 be reworded as below in order to effect parallel construction and improve clarity:

3.1.3 - Asbestos insulation blocks should be handled with care.. If dust cannot be removed by vacuum, respiratory protective equipment must be used.

COMMENT BY W. H. THOMPSON - P & P - PARLIN PLANT

COMMENT NO. 67 - This is not necessarily good measurement on the Plant level in as much as this standard will probably form the basis for Plant Standard Practices or Standard Operating Procedures, which will take precedence from then on. Without a standard on this subject, local practices will vary from no protection to unnecessarily involved protection. This looks like an excellent guide from the Plant standpoint.

Thirteen Engineering Standards Committee members advise an estimated total of 150 uses for this standard as reference per year.

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COMMENT NO. 75 - 3.2.2 - "An adequate exhaust system" should be defined. A minimal exhaust rate per fan should be specified. Our experience showed that, despite exhaust fans and no appearance of dustiness, the threshold limit value was still exceeded. Suitable protection is not defined. Consideration should be given to exposure of other people in the work area.

COMMENT NO. 76 - 3.2.3 - "Avoid Sweeping" - this should be a positive rule. Do not sweep.

COMMENT NO. 77 - Air sampling will not control dust. Air samples should be taken to document the adequacy of controls. (3.2.4)

COMMENT NO. 78 - 3.3.3 - Respiratory protective equipment should be worn when disposing of old asbestos cement.

COMMENT NO. 79 - 3.4.2 - Specify suitable respiratory protection.

COMMENT NO. 80 - 3.4.4 - We have found no plant or governmental regulations governing the disposal of asbestos.

COMMENT NO. 81 - 4.1 - This rule really says always wear respiratory protection when handling asbestos. Samples are sent away for analysis and results are known long after the fact - too long for corrective action.

COMMENT NO. 82 - 4.1.2 - A reference to U. S. Bureau of Mines Schedule 21-B, Part 14, Subpart A, item 14.4, minimum efficiency 0.3 micron is needed. Several suppliers of respirators that meet this requirement are:

Acme Protection Equipment Co.
1201 Kalamazoo Street
South Haven, Michigan

American Optical Company
Southbridge, Mass.

Mine Safety Equipment Co.
Braddock, Thomas, and Mead Streets
Pittsburgh, Pa.

COMMENT NO. 83 - 5.1 - Recommend addition of: " and should be disinfected after each use". (See S2H)

COMMENT NO. 84 - 5.2 - Recommend addition of: "wear respirator when removing dusty clothing".

COMMENT NO. 85 - 6.1 - Suggest clarification of this statement. Recommend addition of: "with a battery-powered personal air sampler." Suppliers of such samplers are: The Mine Safety Equipment Company and the Union Industrial Equipment Company.

COMMENT NO. 86 - 6.1.1 - Evaluating a complete operation in this manner will be very time consuming. Sampling with millipore (membrane) paper or its equivalent, usually is of short duration (10-15 min.) because of the high collection efficiency of this paper. Such a procedure, as described, might involve taking many samples for an eight-hour shift for each operation. At $15.00 per sample for analysis, the cost of this operation will exceed the benefits, since the results of these analyses are not known for some time and any reference to the TLV for

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ENGINEERING DEPARTMENT

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J. E. Borden - Plastics - Victoria
R. W. Calhoun - Tex. Fib. - Seaford
J. T. Cavanaugh-Pigments-Edge Moor
F. H. Dineen - Elchem - Wilm.
H. Lewis-Explos.-Carney's Pt. Dev.Lab.
W. T. Muncaster-Elaschem-Chambers Wks.
P. A. Palmer - ESD
W. S. Person - Orchem - Chambers Works
B. J. Stone - Design
C. W. Van Ness-Photo Prod.-Towanda
F. H. Whitaker - Design
I. Zeise - Construction

January 7, 1972

MEMORANDUM NO. 2

TO: D. G. WINDSOR - CHAIRMAN - EMP. REL. - WILMINGTON

FROM: C. E. MARSH - STANDARDS SECTION C. E. Marsh

STANDARDS SECTION - SAFETY & FIRE PROTECTION SUBCOMMITTEE
S4T - MEASUREMENT AND CONTROL OF ASBESTOS DUST EXPOSURE

Our request to the Engineering Standards Committee for approval of the above standard has brought the following additional comments.

K. W. DAHL, COMMENT BY C. C. FRING - PLASTICS - SABINE RIVER WORKS
COMMENT NO. 68 - We would like to have suggested sampling equipment added to the standard.

G. S. REEDER, JR., COMMENTS BY W. O. CHRISTY - EXPLOS. - SAVANNAH RIVER
COMMENT NO. 69 - 2.4 - Sampling fibers and particulates can differ. The battery-operated sampler approved for fiber sampling should be specified to include millipore filter.

COMMENT NO. 70 - 3.1.2 - Type of vacuum cleaner and filter should be specified. Without high efficiency filters, this cleaning operation will filter out all particles and fibers, except those in the respirable fraction.

COMMENT NO. 71 - 3.1.3 - Type of respiratory protection should be specified.

COMMENT NO. 72 - 3.1.4 - Glass-coated insulation is satisfactory until the coating is penetrated by cutting blocks.

COMMENT NO. 73 - 3.1.5 - This operation can still produce dust in breathing zones unless carefully controlled, perhaps a self-closing damper on the chute or flexible self-sealing slot.

COMMENT NO. 74 - 3.2.1 - Experience with cyclone collectors for asbestos indicates they are inefficient and in some instances cause atmospheric pollution.

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that work period will be meaningless. Such a program of sampling could be satisfactory provided the work conditions do not change. Respiratory protection must be required in all cases where the degree of exposure is unknown.

COMMENT NO. 87 - 6.1.3 - Asbestos handling is now recognized as an extremely serious industrial hygiene problem. Analyzing asbestos samples is necessary. But the problems in sending samples several hundred miles by mail should be pointed out and the importance of correct handling emphasized. Some of the problems are: Transportation of samples may cause damage to the sample and possible loss of sample; delay in receiving results. This will, probably, be inevitable with laboratories receiving many such samples.

Expensive as it may appear, the alternative may be to do local monitoring, use local laboratories, or to utilize the best engineering and personal protective measures available.

W. A. PARMAN, COMMENT BY W. F. DOBBS - I & B - BELLE PLANT
COMMEN. NO. 88 - 3.4.2 - Believe some exception should be made to this requirement permitting "small" amounts of insulation to be removed without respiratory protection. Can a rule-of-thumb quantity be stipulated which will not result in exposure to higher than permitted TLV? Can incidental removal of insulation not requiring over 5 to 10 minutes be excepted?

Sixteen Engineering Standards Committee members advise an estimated total of 245 uses for this standard as reference per year.

kjk

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