FILE NAME: Kaiser Gypsum (KG)

DATE: 1984 Sept

DOC#: KG057

DOCUMENT DESCRIPTION: Report - Health Knowledge in the Gypsum Industry with Cover Memo

Manville

Internal Correspondence

To: D. H. Markusson, 2-20

Date: September 28, 1984

From: J. A. Siderius, 2-19

Copies: L. Polk, 2-17, K. Page, 2-17, R. Brady, 2-19
File/Chrono

Subject: Gypsum Health

PLAINTIFF'S EXHIBIT
NG-367

Attached please find a report on the above subject, including bibliography, titled "Health Knowledge in the Gypsum Industry."

Your attention is directed in particular to Section VI which discusses certain documents that appear to show efforts to conceal health information by National Gypsum and W. R. Grace.

The supporting documents can be found in the file labeled "Gypsum Health."

September 26, 1984

HEALTH KNOWLEDGE IN THE GYPSUM INDUSTRY

I. Use of Asbestos in Spray-On Product

The use of asbestos in spray-on form apparently began in 1932 in Great Britain. This was the "Limpet" process, at first used primarily in railroad coaches to control condensation and noise, and also as a thermal insulation (69). Sprayed asbestos was used extensively in the British Navy from the end of the war until 1963. This use consisted almost entirely of blue fiber.

Spray-on insulation containing inorganic fiber was introduced in the U.S. in 1935. The use was at first mainly decorative. This decorative-use product may have contained little or no asbestos (69). In 1950, National Gypsum obtained Underwriters Laboratories approval for its brand of spray-on insulation to be used for fireproofing. In 1951, the Asbestospray Company followed suit (69). Widespread use apparently began in 1958 with the use of sprayed mineral fiber as fireproofing in the construction of the 60-story Chase Manhattan Bank building in New York (74).

The precise point in time when asbestos fiber was introduced into the spray-on product in the U.S. is not known. While it is likely that asbestos was introduced simultaneously with the first use of spray-on for fireproofing (1950), other sources place the date in the late 50's.

It is clear, however, that asbestos was used in the gypsum manufacturing process as far back as the 1920's. Asbestos fiber was added to stucco mix to improve working qualities (29). It was also used as a retarder in plaster of paris (29). Both are gypsum products.

In 1935, Atlantic Gypsum Products Co. agreed with its insurance carrier to a supplemental occupational disease loading factor based on the mixing of both asbestos and gypsum rock (7).

Also, it is noteworthy that Dr. George Wright began working for National Gypsum reading X-rays in 1953. He states that he recalls seeing cases of asbestosis among National employees at that time. He does not know if the cases came from workers involved in spray-on making.

New York City banned spray applications of asbestos containing material in 1972. The EPA banned spray application of any insulating or fireproofing material with more than 1% asbestos in 1973 (79).

II. Working Conditions in the Industry

There are several early descriptions of dusty working conditions in the gypsum industry. In the 1918 U.S. Department of Labor publication "Mortality from Respiratory Diseases in Dusty Trades," the following quote appears:

> "W. Gilman Thompson writes of the occupation of masons and plasterers at some length, including concrete mixers, who, of course, are exposed to fundamentally different conditions. He points out that men in this group of employments inhale much dust of tile, brick, plaster of paris, gypsum, and cement, and that they are subject fom these combined conditions "to catarrhs of the respiratory passages, and such diseases as asthma, bronchitis, rhinitis, and atelectasis are frequently met with among them." There would seem to be much similarity in the dust exposure of these occupations to that observed in the case of lime and cement workers. Thompson suggests, therefore, that in some cases, as in the tearing down of old plaster in confined spaces, in tunnels, etc., where sprinkling can not be resorted to, respirators may be used to advantage. . . It may be said in conclusion that such investigations as have been made of existing conditions at plaster works prove that there is abundant room for material improvement, and that in most of the plants only the crudest and most unsatisfactory appliances are employed for the prevention of dust and its inhalation by the men employed (2). (emphasis added).

Another description of working conditons in gypsum plants was given in a 1929 insurance industry publication designed to assist underwriters in classifying industrial hazards:

> "In one of the smaller plants, there was no adequate provision for the removal of dust. It was everywhere. On the roofs and platforms and even on the ground for some distance it had settled in layers sometimes inches thick. It is present to a marked degree in the dry mill process in all plants, and at times it is possible to

distinguish objects across the room and no more. The dust moves about in this department much like steam, and is so fine that it has the appearance of moisture.

Workers in certain departments habitually look as if their clothes had been sprinkled with flour. The dust collector in one modern plant removes eight tons of dust daily (4)."

III. Early Knowledge of Gypsum Health Hazards

Gypsum mining entails some hazard from free silica, due to the fact that gypsum rock is sometimes found near quartz-bearing deposits (5, 80). Knowledge of silica health risks was established in the early part of the century, since it was thought to be a contributing factor in tuberculosis. Gypsum rock dust and dust created by the plaster of paris product were noted and compared to health effects of silica dust as early as 1917 (1, 2).

There is reference in a 1928 insurance rating publication to a specific lung disease among gypsum workers. This reference gives some insight into the limited state of medical information at the time. Nevertheless, the term "stycosis" was used in the report, describing use of gypsum as a paint mineral base:

"Gypsum is calcium sulphate. Although in the mining and purification of this mineral, so gross is the exposure at times that gypsum workers may develop a dusty lung disease ("stycosis"), its occurrence in paint manufacture is unknown.

> It may not be maintained that the many mineral substances which we have exculpated as health hazards in the foregoing list are entirely free from harmful action. Practically any dust, organic or inorganic, brought into contact with the eyes or mucous membranes is slightly irritating, and gross exposure over long periods of time is likely to produce a more serious form of disease. In the present writing we have continuously had in mind the limited exposure that should take place in paint manufacture (3).
>
> While calcium sulphate is believed to be chemically and physically harmless in small quantities, so great an exposure may take place that the respiratory tract may be gorged with this dust. Obviously, under such circumstances, no dust may be regarded as entirely - harmless (4).

This observation was made by a Dr. Carey P. McCord, of the Industrial Health Conservancy Laboratories in Cincinnati, Ohio.

By 1934, health studies on the effects of gypsum dust were being conducted (5, 25). The first study found in the literature, in 1934, concludes that ". . .exposure to gypsum does not produce any permanent or serious lung pathology and that no demonstrable disability results from years of exposure" (5). This study, however, notes that silica was a common impurity in gypsum rock, and that commercial operations involved "the production of great quantities of dust, much of which is very fine. Workers at these operations are therefore liable to a steady inhalation of large amounts."

IV. Simpson Papers

The Vandiver Brown and related documents reveal a number of aspects of gypsum industry involvement and knowledge regarding the Saranac studies.

In a memorandum describing the Mellon Institute of Industrial Research Symposium on Dust Problems held in Pittsburgh, PA on January 15, 1935, Brown notes a comment by Dr. Lanza:

> ". . .Mr. Lanza pointed out that no one had ever maintained that gypsum dust was harmful and yet, nevertheless, the gypsum industry had suits pending against it covering claims in excess of four million dollars" (6).

In a 1935 letter, Dr. Gardner informed Metropolitan Life Insurance Company that basic studies on both asbestos and gypsum dusts had been completed (8).

The Gypsum Association, an industry trade group, produced witnesses including Dr. Gardner on its behalf at a 1936 workmen's compensation ratings hearing:

> The Gypsum Association set forth its views on the dust conditions in its industry in a fifty-nine page brief and supplemented its printed statement by the oral testimony of experienced men in the industry and such silicosis experts as Doctors L. U. Gardner and Homer M. Sampson of the Saranac Laboratory. The Association succeeded in convincing the Committee that the amount of free silica dust present in the mining and processing of gypsum was negligible and that the specific O. D. rate for this industry should be eliminated except for the making of sanded wall plaster (10).

Perhaps most important, U.S. Gypsum Company was a signatory to the 1936 agreement that provided industry funding for Dr. Gardner's experiments on the effects of asbestos dust (12, 3, 16). There was correspondence at this time between Brown and J. S. Offutt, Assistant to the President of U.S. Gypsum (14, 15).

Dr. Gardner published a short article in 1938 again setting forth the theory first hinted at by Riddell in 1934 that gypsum dust inhibited the harmful effects of silica (17). This article called for further research into gypsum dust.

There was additional correspondence between Brown and officials of U.S. Gypsum in 1944, '48, '49, and '51 (18, 19, 20, 21, 23). These letters all concerned Dr. Gardner's asbestos dust experiments.

It is noteworthy that the dates of the above studies almost certainly precede the widespread use of asbestos in the spray-on product.

In 1955, Dr. Schepers, then Director of the Saranac Laboratory, published two papers on gypsum dust, one dealing with a human x-ray study, and one with animal experiments (24, 25).

V. 1960's Documents

A number of National Gypsum documents produced to J-M by Travelers shed light on National's knowledge of asbestos hazards. J-M documents from this time frame reveal considerable exchanges of information between J-M, National Gypsum, W. R. Grace, and trade associations which often included both J-M and gypsum manufacturers.

A 1961 letter from Cliff Sheckler to an industrial relations manager at W. R. Grace answers the latter's request for information on Thermobestos. Sheckler cites the ACGIH standard for airborne asbestos dust, and states:

> "Assuming that the airborne dust would approximate the material ratios of the product, this would indicate that dust levels approaching 50 million particles per cubic foot would not contain an excessive amount of asbestos fiber" (27). There is a similar 1965 letter from Sheckler to an official of U.S. Gypsum (31).

Minutes of a 1965 meeting of the Air Hygiene and Manufacturing Committee of the Asbestos Textile Institute show that a copy of ATI's pamphlet, "Method for Determining Asbestos Dust Concentration" was mailed to the Zonolite Division of W. R. Grace in Libby, Montana (30). In this regard, documents indicate that National Gypsum was an associate member of ATI in the late 50's and early 60's, resigning in 1962 (28).

Also, National, according to its documents, became a member of the Quebec Asbestos Mining Association (QAMA) in 1956 when it opened a mine at Thetford Mines (32, 65).

Thus, it is apparent that National Gypsum also engaged in sales of fiber to Armstrong Cork and British Metals Corporation (32, 33). In connection with National's fiber sales to British Metals, there is a 1967 discussion of using dust-proof packaging for fiber shipments in order to comply with British health regulations (33).

VI. Concealment Documents

There exists a series of National Gypsum documents beginning in 1968 which could be construed to show an effort on the part of National to restrict the dissemination of health information about asbestos. These same documents show J-M as the party initiating such dissemination.

An undated 1968 memo found in National's documents produced by Travelers reads:

> A meeting was held on April 3 with representatives of Certainteed, Ruberoid, and Johns-Manville present, at which time J-M expressed a desire for the immediate industry cooperation in publishing a booklet called, "Recommended Health Safety Practices." This booklet is designed to point out safe ways to handle, apply, warehouse, and process products for the construction industry. This proposed booklet would be published by the Asbestos Building Products manufacturers.

We would like to communicate to Mr. Burnett as follows: . . .Manufacturers with competitive products would certainly use it to our disadvantage - examples - aluminum siding, hardboard, cast iron pipe, corrugated metal, etc. . . . Recommend booklet have limited distribution within Asb. Mfg. Companies only if issued.

T RESOLUTION=600

@PJL ENTER LANGUAGE=PCL