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ALBERT HOFF, JR. and GLORIA HOFF, Plaintiffs, -vs- METROPOLITAN LIFE INSURANCE COMPANY, et al., Defendants.	:	SUPERIOR COURT OF NEW JERSEY LAW DIVISION-MIDDLESEX COUNTY DOCKET NO. MID-L-2015-16S Civil Action Asbestos Litigation

DECLARATION OF BARRY I. CASTLEMAN

1. My name is Barry I. Castleman. I hold a Bachelor's degree in Chemical Engineering, a Master's degree in Environmental Engineering, and a Doctor of Science degree from Johns Hopkins University. I have published numerous articles in peer-reviewed professional journals. I am the author of Asbestos: Medical and Legal Asbestos, now in its fifth edition. Attached hereto, and incorporated herein by reference, is a true and correct copy of my Curriculum Vitae.

2. I have testified frequently before congressional committees because of my knowledge of the asbestos industry. I have also served as an expert consultant to many organizations including the Natural Resources Defense Council, the U.S. Council on Environmental Quality, the U.S. Federal Trade Commission, the Sierra Club Legal Defense Fund, the U.S. Congress Office of Technology Assessment, the U.S. Consumer Product Safety Commission, the U.S. Occupational Safety and Health Administration, the U.S. Environmental Protection Agency, the International Labor Office, the National Academy of Sciences, the World Resources Institute, the United Nations Centre on Transnational Corporations, the State of Maryland Attorney General's Office, The European Commission, and the World Bank.

3. My book, Asbestos: Medical and Legal Aspects, now in its fifth edition, is a treatise on the public health history of the asbestos industry and the development of knowledge about asbestos and its hazards. The book is the result of many years of research into the history of the use of asbestos, the use of asbestos products in various industries, the early manufacturers and suppliers of asbestos and asbestos-containing products, and the effects asbestos has on humans. My book references thousands of articles, books, congressional hearings, industrial and scientific material, and corporate documents which I have read and analyzed. It is cited as "Exhibit 1, Castleman, p. ___" hereafter.

4. In addition to relying upon my research and investigation into corporate documents and other sources described above, I have reviewed sworn testimony given by Dr. David Egilman in trial against Metropolitan Life Insurance Company ("Met Life") conducted in 2001 in cases entitled Aaron, et al. v. Abex Corporation, No. 94-C-2110-2 and Bright, et al. v. Owens Corning et al., No. 11414 BH00, in the District Court, 23rd Judicial District, Brazoria County, Texas. Dr. Egilman is a medical doctor with a medical degree from Brown University in 1978, and a Master's degree in public health from Harvard School of Public Health in 1982. He completed three medical residencies, in internal medicine, occupational medicine, and preventative medicine. He practiced medicine and taught at Brown University in Providence, Rhode Island. He also worked with the National Institute of Health and was assigned to Public Health School to learn occupational medicine and regulation of worker health, among other things. He became a medical officer with the National Institute for Occupational Safety and Health.

I. MET LIFE'S EARLY KNOWLEDGE OF THE HAZARDS OF ASBESTOS

5. By the early 1920s, Met Life had knowledge that asbestos exposure to humans could lead to asbestos-related diseases. Met Life knew in 1921 that asbestos workers were in a hazardous occupation because of exposure to harmful inorganic dusts like asbestos. (Exhibit 2, "Occupational Hazards and Diagnostic Signs, a Guide for Medical Examiners," Metropolitan Life Insurance Company, 1921). The publication listed cough, dyspnea, clubbed fingers, rales, and fibrosis as symptoms to look for in persons exposed to inorganic dusts, such as asbestos workers. Many of these were the same symptoms found in persons suffering from asbestosis, publicly reported in the 1920s. Met Life was also aware of high claim rates for lung disorders made at one of its group policyholders. An actuary noted in 1935 that claims were exceeding premiums at Johnson's Co., a company engaged in asbestos quarrying and manufacture. "An analysis of the claims shows a preponderance of lung disorders. The company is engaged in the quarrying and manufacturing of asbestos, and we feel there is a decided occupational hazard here." (Exhibit 3, Memo May 27, 1935, G.W. Fitzhugh to Dr. McConnell). Met Life raised the premiums for asbestos miners by 40 percent for accident and health coverage, compared with non-hazardous industries, in order to make insuring asbestos workers a profitable business. (Exhibit 4, Memo August 22, 1939, D.C. Buell to Dr. McConnell).

II. THE EARLY MET LIFE SPONSORED RESEARCH—KEPT UNDER WRAPS

A. The Canadian Studies

6. In 1926, Met Life determined to provide funding to establish an industrial hygiene department at McGill University in Canada. Met Life went into this program on the basis that there would be "a definite, tangible, quid pro quo." (Exhibit 5, Memo January 19, 1926, Dr.

Wright to Dr. Knight; Exhibit 6, letter January 7, 1926, medical director to Dr. Charles F. Martin; Exhibit 7, letter January 19, 1926, C.F. Martin to Augustus Knight).

7. The new McGill group produced a study of examinations of asbestos mine workers in Asbestos and Thetford Mines, Quebec, dated November 1930. The study involved 140 employees of Canadian Johns-Manville. Of 195 workers, 42 had asbestosis. (Exhibit 8, Frank G. Pedley, M.D., "Report of the Physical Examinations and X-Ray Examinations of Asbestos Workers in Asbestos and Thetford Mines, Quebec," 1930). Dr. Pedley had noted that the study was "being carried on with the cooperation of the Metropolitan Life Insurance Co., and it is expected that valuable information on the subject of asbestosis will be forthcoming." He also "hoped that permission to publish the results will be obtained." (Exhibit 9, Pedley, "Report of the Activities of the Industrial Clinic, Montreal General Hospital, for the year September 1, 1929 to August 31, 1930," pp. 2-3). Dr. Pedley pointedly reiterated to Met Life that "an interesting state of affairs was disclosed, which was reported to Dr. A.J. Lanza of the Metropolitan Life Insurance Company, but to date permission has not been secured to publish the results of the study." (Exhibit 10, letter October 11, 1932, Dr. Pedley to N.L. Burnette of Met Life, pg. 2). Pedley never did publish his 1930 findings. (Exhibit 1, Castleman, p. 19).

8. Met Life prepared its own report of the Canadian studies, which included dust study information as well, entitled "Effects of the Inhalation of Asbestos Dust Upon the Lungs of Asbestos Workers, Canadian Study." (Exhibit 11). Met Life sent a copy to attorney Allan Wardwell on July 9, 1931, with the caveat that the report would "be given no publicity by us except with the consent of the firms concerned." (Exhibit 12). Many of the dust counts were well under what became the Threshold Limit Value ("TLV") of 5 million particles per cubic foot ("5 MPPCF"). This report was never published.

B. <u>The United States Studies</u>
1929-1931 Five Plant Study

9. According to Met Life, in 1929 Met Life was approached by firms representing the asbestos industry in the United States with the request that a hygiene study be made of that industry. Met Life studied five plants, of which one was a Johns-Manville plant. Met Life conducted asbestos "dust counts" and did x-ray examinations of 126 workers, "selected more or less at random from among those having more than three years employment in the industry." (Exhibit 13, "Effects of the Inhalation of Asbestos Dust Upon the Lungs of Asbestos Workers," pg. 6). Films "were read conservatively," and "only those were classed as positive about which there was no major disagreement" (p. 7). Of the 126 workers, 67 were diagnosed with asbestosis and 39 were "doubtful." Most with "doubtful" or "negative" readings complained of shortness of breath and cough (p. 8). (Exhibit 1, Castleman, p. 147). Lanza sent this report to Mr. Wardwell, noting that it was confidential and "will be given no publicity by us except with the consent of the firms concerned." (Exhibit 14, letter March 20, 1931, Lanza to Wardwell).

10. One of the dust surveys for the asbestos industry was done at the Manville, New Jersey plant of Johns-Manville in 1929. Met Life found that dust exposures at Manville were, overall, far below the 10 Million Particles per Cubic Foot (MPPCF) of air, the concentration of respirable particles then regarded as the exposure limit for silica dust, a recognized lung scarring hazard. The highest dust count for the textile operations was 2.5 MPPCF, with two thirds of the dust counts (14/21) below 1 MPPCF. (Exhibit 13, "Effects of the Inhalation of Asbestos Dust Upon the Lungs of Asbestos Works," p. 4).

11. The 1931 Met Life report on U.S. plant studies concluded that prolonged exposure to asbestos dust causes a pulmonary fibrosis, of a definite type distinct from silicosis, demonstrable on x-ray films.

Conclusion No. 6 was:

> It is not practicable as yet to establish standards for the dust content of air and in view of the many low dust counts in this report, compared with the U.S. Public Health Service standard for silica dust, it is possible that asbestos may cause pneumoconiosis more readily than free silica (SiO_2). (Emphasis supplied.)

12. In an unpublished address entitled "Comments on Asbestos" to proceedings of the November 1933 meeting of The Home Office Underwriters Association, Lanza commented on this study, and remarked:

> We made a great many dust counts in these mills and, in the main, the amount of dust in the air did not seem excessive as judged by the standards or what we had been accustomed to find in making dust counts for silica dust. (p. 298). (Exhibit 15). (Emphasis supplied.)

13. The foregoing observations are significant because they show (a) considerable asbestos-related disease – over 50% of the workers affected – with (b) relatively low dust counts as compared with silica counts and standards. Met Life apparently recognized that whatever the "safe" level for asbestos would be, it should be lower than that for silica.

14. Silicosis was caused by silica dust which produced a progressive fibrosis which itself could cause disability and death. Studies were "in agreement in showing extraordinarily high mortality rates from tuberculosis for industries and occupations in which large numbers of men are known to be exposed to a real silica hazard." (Exhibit 16, A.J. Lanza and R.J. Vane, "Industrial Dusts and the Mortality from Pulmonary Disease" (1939), p. 423). In this text, Lanza wrote that one of the "confusing" aspects of asbestosis was that none of the cases published were in asbestos miners. The McGill findings of asbestosis in the Canadian mines had been suppressed.

15. Lanza commented on the medico-legal aspects of silicosis and asbestosis in the first years of the Great Depression:

> Silicosis and asbestosis burst upon the amazed consciousness of American industry during the period of 1929-1930... Arising out of the period of economic depression, the situation with respect to silicosis and asbestosis became manifest as a medico-legal phenomenon of a scope and intensity that was at once preposterous and almost unbelievable. Damage suits, under the common law, were instituted against employers by employees, alleging pulmonary dust diseases, in industrial centers all over the United States, to an amount in excess of 100 million dollars.

(Exhibit 17, Lanza, A.J. (ed) Silicosis and Asbestosis, London and New York, Oxford Univ. Press, 1938, pp. 405-406, reprinted in Exhibit 1

, Castleman, p. 144).

16. Silicosis was viewed by at least one industry lawyer as "our greatest industrial hazard which, if not properly controlled, will result in the financial ruin of many companies." The problem was "this flood of pneumoconiosis cases," regarded as a "racket" generated by "shyster lawyers" and "their twin brothers in iniquity, the quack doctors." (Exhibit 18, "The Problem" by Alfred P. Hirth, pp. 8-9 (1935)).(Speech given at meeting of forming the Industrial Hygiene Foundation.).

1932 J-M Study, Manville, New Jersey

17. The following describes the 1932 Manville plant study entitled "Physical Examinations at Manville Factory, Manville New Jersey" (Exhibit 19, as set forth in Exhibit 1, Castleman, pp. 21-22):

> In 1932, medical examinations were conducted for all 1,140 employees of Johns-Manville's factory in Manville, New Jersey. Guidance was obtained from Metropolitan Life doctors Lanza and Fellows in designing the survey. Interpretation of chest x-rays was done by Dr. F.V. Meriwether, chief of the U.S. Bureau of Mines clinic in Picher, Oklahoma; however, Dr. Meriwether was not provided with information on the occupational exposure histories of the workers after their hire by Johns-Manville. The report of this unpublished study shows 327 (29%) of the workers had x-ray evidence of pneumoconiosis, which was called "asbestosis" if the workers had had no prior history of exposure to occupational dust hazards. The company separately tabulated length of service and length of

exposure, while noting asbestosis among a number of workers listed as having no exposure. Some of the employees diagnosed by x-ray as having asbestosis, whose "exposure" at Manville was recorded as "none" were a watchman, a mill-wright, packing and shipping department workers, and machinists. Thus, Manville plant workers exposed as "bystanders" were identified as asbestosis victims before any such cases were reported in the published medical literature.

18. Importantly, the understanding of J-M and Met Life that asbestos disease could be caused by low exposures, including those experienced by bystanders such as watchman and shipping clerks, was not part of the published literature at the time. For example, the British regulations at the time did not include (schedule) such bystanders as "asbestos workers" based on the assumption their exposures were not significant enough.

19. The 1932 Manville study provided further evidence that asbestos disease could and did result from exposures which were low. It was noted that 16 percent of the asbestosis cases were in the textile department, the building where Met Life's 1931 report had found exposures to respirable dust to be 2.5 MPPCF and below. Though an edited version of the 1931 factory worker report would be published in 1935, this 1932 survey, which involved a worker population almost 10 times as large, never saw the light of day until it was revealed in litigation in the 1980s.

III. THRESHOLD LIMIT VALUE HISTORY

A. The 1935 Met Life Report "Effects Of the Inhalation of Asbestos Dust On the Lungs of Asbestos Workers" and Its Sequelae

20. At meetings held at J-M's offices on November 28, 1933, and January 4, 1934, it was proposed and agreed among J-M and Raybestos-Manhattan executives and Met Life that Met Life would complete its investigation and survey instituted in 1929. (Exhibit 20, Memo November 28, 1933; Exhibit 21, Memo January 4, 1934). The correspondence trail shows what happened next.

21. Vandiver Brown, corporate attorney at J-M, wrote Lanza on December 10, 1934, and commented upon galley proofs of the upcoming report. Brown wanted included a sentence which had appeared as conclusion 1 in the 1931 (unpublished) report referring to the disease, asbestosis, saying clinically "it appeared to be of a type milder than silicosis." (Exhibit 22).

22. Brown sent the galley proofs to George Hobart, a Newark attorney. Hobart wrote a letter of December 15, 1934, taking issue with several statements. (Exhibit 23). One reference was that Plant E "was unnecessarily dusty." The comment appears in the 1931 report (Exhibit 13, p. 11, ¶¶10-11, above) and does not appear in the final published report, (Exhibit 24, p.6). Hobart concurred with Brown that the conclusions should reflect that clinically, asbestosis was,

or appeared to be, milder than silicosis. Hobart wanted this included to show there was a substantial difference between silicosis and asbestosis, since J-M was opposing inclusion of asbestosis as a compensable disease before the New Jersey legislature and defending lawsuits brought on negligence theories. This conclusion was not included in the galleys, the correspondence makes clear. It reappeared in the final, published report. Hobart also did not like the possibility that a pneumoconiosis could arise more readily from asbestos than from granite dust, i.e., silica dust. He therefore stated that "we should, if possible, eliminate all that part of conclusion No. 6 following the semicolon after the words "of air..." (Exhibit 23, Letter, December 15, 1934, Hobart to Brown).

23. Brown, under date of December 21, 1934, (Exhibit 25), sent Hobart's letter to Lanza. He stated that no one was suggesting that Lanza alter "by one jot or tittle any scientific facts or inevitable conclusions." But he asked "that all of the favorable aspects of the survey be included and that none of the unfavorable be unintentionally pictured in darker tones than the circumstances justify." Brown closed with the sentiment that he felt "confident we can depend upon you and Dr. McConnell to give us this 'break'...."

24. Met Life authors did make the change to conclusion No. 1 that asbestosis was "milder than silicosis" and deleted the offending passage from conclusion No. 6, to remove the point that asbestos may cause disease more readily than silica. The latter conclusion was made in both the unpublished 1931 report and in the galley proofs of Lanza's article. The final Met Life article, published on January 4, 1935, by the U.S. Treasury Department, in the journal Public Health Reports, omitted that conclusion. (Exhibit 24).

25. The altered report, as published, downplayed the dangers of asbestosis as an occupational disease by suggesting that none of the workers with asbestosis were disabled. To make matters worse, the next year, Dr. Lanza contended in an editorial in the Journal of the American Medical Association, without any basis in fact, that the asbestos industry had the problem of asbestosis under control and that most doctors would never see a case of it.

26. The companies with asbestos and silica hazards wished to promote occupational exposure limits for asbestos and silica dust in the air, to help them defend lawsuits. (Exhibit 26, letter January 22, 1935, V. Brown to M.F. Judd with Memorandum; Exhibit 27, letter March 22, 1935, L.R. Thompson of Owens-Illinois to L.R. Thompson, USPHS see enclosure 5, p.1). (plan at outset of Industrial Hygiene Foundation to set up authoritative and approved standards for control of dusts which, if complied with, "will act as a defense against personal injury suits".) The TLVs, as these limits were later called, also were misconstrued as a guarantee of safety by some of the people whom they were ostensibly intended to serve. (Exhibit 28, Castleman and Ziem, "American Conference of Governmental Industrial Hygienists: Low Threshold of Credibility," 26 American Journal of Industrial Medicine 133, pp. 142-143). This is because they came to be widely represented and accepted as scientifically-based limits that would protect

virtually all workers from health impairment over a lifetime of exposure on the job. (Exhibit 29, Castleman and Ziem, "Corporate Influence on Threshold Limit Values," p. 25). Met Life knew from the 1930-1932 studies that a TLV of 5 MPPCF was not safe for asbestos-containing dust, and that if there was a safe level it was below that concentration. (Exhibit 30; Aaron Tr., 2-05-01, pp. 53-81). But the 1930-1932 Manville plant and mine worker studies were concealed, and Met Life deleted the critical conclusion suggesting that the TLV be lower for asbestos than for silica dust in its report published in 1935.

27. The Air Hygiene Foundation's medical committee, chaired by Lanza, suggested a TLV of 5 MPPCF for silica dust, although they separately doubted the adequacy of scientific knowledge for setting a threshold to prevent silicosis. J-M then succeeded in holding the limit at 5 MPPCF for asbestos dust based on the implication (supported by Lanza's J-M induced changes to the 1935 report) that asbestosis was a less serious disease than silicosis. (Exhibit 31, Markowitz and Rosner, "Public Health Then and Now, The Limits of Thresholds: Silicon and the Politics of Science, 1935 to 1990," Vol. 85, No. 2, p.225). J-M's Vandiver Brown suggested that the 5 MPPCF limit for asbestos-containing dust was selected with it well in mind that this was the level prescribed for silicosis. (Exhibit 1, Castleman, p. 235). U.S. Public Health Service surveys of three North Carolina asbestos textile mills by Dreessen, Miller, et al, which formed the principal basis for the TLV, were hampered because the mills had fired 150 workers, out of less than 600, suspected of having asbestosis. Of the fired employees that were located, 43 of 69 had asbestosis, but no attempt was made to assess their exposures at the plants. (Exhibit 1, Castleman, p. 238). While government, industry and academic hygienists endeavored to set a TLV, neither J-M nor Met Life revealed the findings from the 1930-32 Manville plant and mine worker studies. Likewise, the information deleted from the 1935 published report was not publicly disclosed. In one medical book, "Industrial Medicine" by Clark and Drinker, the authors stated that on the basis of abundant experience McConnell of Met Life preferred to see the dust count below 5 million and welcomed still lower figures. This was referenced to a personal communication. (Exhibit 32). The book does not indicate that McConnell shared with the authors the basis for his preference, and the reference stands as further confirmation that Met Life knew the 5 MPPCF exposure limit was unsafe.

28. The book "Silicosis and Asbestosis" (1938) edited by Lanza, referred to the study commenced in 1929 and published in 1935. The book repeated the conclusion that asbestosis, clinically, appears to be milder than silicosis (Exhibit 17, p. 59). It did not disclose that this conclusion was inserted at the behest of J-M, nor did it disclose that the original conclusion, that the safe level was likely less for asbestos than silica dust, had been deleted at J-M's behest, although it referred to the 5 MPPCF as a threshold limit suggested by Dreessen, Miller, et al. (Exhibit 17, p. 59).

29. Met Life knew, from its studies in 1929-1932, that the safe level for asbestos should be set below 5 MPPCF. (Exhibit 30, Aaron Tr., 2-05-11, pp. 54-57). Nonetheless, Lanza

wrote to Manfred Bowditch, Director, Division of Industrial Hygiene, Massachusetts, on December 13, 1937, and agreed that 5 million particles was "a pretty fair threshold for the asbestos industry." (Exhibit 33).

B. The 1947 Hemeon Report

30. The Industrial Hygiene Foundation ("IHF") was formally founded in 1936, as Air Hygiene Foundation. (Exhibit 1, Castleman, p. 681). Industry people met at the Mellon Institute, including Alfred Hirth ("The Problem" speech), Lanza, and Vandiver Brown, on January 15, 1935. Problems identified, according to Brown, were "the menace of ambulance chasing lawyers in combination with unscrupulous doctors," and desirability of covering dust diseases under workers compensation, to eliminate juries and "the shyster lawyer and the quack doctor." (Exhibit 26, "Memorandum Re: Mellon Institute of Industrial Research Symposium on Dust Problems –Pittsburgh, Jan. 15, 1935" dated January 18, 1935, by Vandiver Brown). Mr. Brown characterized the Air Hygiene Foundation as "the creature of industry" and "the one institution upon which employers can rely completely for a sympathetic appreciation of their viewpoint." (Exhibit 34, letter December 4, 1936, V. Brown to C.J. Stover).

31. Lanza was on the IHF board of trustees and chairman of its medical committee from the 1930s to the 1950s.

32. In 1947, W.C.L. Hemeon, head engineer of the IHF, conducted an industrial hygiene investigation for the Asbestos Textile Institute. He studied dust levels and disease in ten plants, including J-M. (Exhibit 35). Hemeon's observations on the inadequacy of the 5 MPPCF TLV standard are excerpted in my book (Exhibit 1, at p. 254):

> The maximum permissible dustiness for asbestos is commonly taken to be five million particles per cubic foot. This represents good attainment in the dust control program. It is emphasized, however, that dust elimination to this extent does not positively insure that no asbestosis will develop in some workers after a long working life (greater than 20-25 years). Scientific evidence is obscure on this point. It is recommended, therefore, that studies be initiated aimed to develop another yardstick, because it is suggested that when control below five million is attained, present dust count methods may not properly measure the remaining hazard.

This point is stressed repeatedly. Some examples:

> ...dust count investigations cannot, in the present state of knowledge, give us assurance as to the extent of our success in eliminating the hazard.
>
> ...in the U.S. Public Health Service study, there were abnormally few who had been exposed for more than 15 years and practically none over 20 years. These facts seriously affected the conclusions that could be drawn.

> The information available does not permit assurance that five million is thoroughly safe nor has information been developed permitting a better estimate of safe dustiness. (original emphasis)

This report remained confidential, and all of the companies studied received a copy as well as a short supplemental report specific to their plants included in the study. (Exhibit 30, Aaron Tr., 2-05- 01, pp. 86-88).

C. The Saranac Studies on Asbestos and Cancer

33. Lanza was of the view that he and Royd Sayers (U.S. Public Health Service) "were instrumental in establishing Saranac Laboratory in the industrial consultation field." (Exhibit 36, memo October 18, 1935, Lanza to Dr. Armstrong). Met Life provided key funding to Saranac during the years 1929-1933, before industrial contract work came in to fully support the laboratory in upstate New York.

34. On November 10, 1936, Sumner Simpson, the President of Raybestos Manhattan, sent a request to asbestos industry executives to contribute to the asbestos dust experiments at the Saranac Laboratory. Mr. Simpson's proposal arose from a meeting that had taken place with Simpson, Vandiver Brown (J-M), Dr. Leroy Gardner (Saranac) and Drs. Lanza and McConnell of Met Life. (Exhibit 37, letter November 10, 1936 Simpson to Schluter, President of Thermoid Rubber Co.) Ten days later, ten asbestos companies agreed to underwrite experiments with asbestos dust to be conducted by Dr. Leroy Gardner, Director of the Saranac Laboratory. (Exhibit 38, "Memorandum of Agreement," November 20, 1936). Vandiver Brown of J-M, on behalf of the group, wrote Gardner authorizing the research. His letter confirmed that results obtained would be considered the property of those advancing the funds, "who will determine whether, to what extent and in what manner they shall be made public." (Exhibit 39, letter November 20, 1936, V. Brown to L. Gardner). Gardner wrote back, agreeing the results shall become the property of the contributors and manuscripts will be submitted for their approval before publication. (Exhibit 40, letter November 30, 1936, Gardner to Brown).

35. On February 24, 1943, Saranac's Gardner sent to Brown an outline of a proposed monograph. He noted that "the question of cancer susceptibility now seems more significant than I had previously imagined." (Exhibit 41, letter, February 24, 1943, Gardner to Brown). The monograph outline noted there were ten cases of lung cancer in asbestos workers in the published literature, and concluded that the human data were suggestive but not conclusive that asbestos caused lung cancer. Of particular significance, Gardner described a Saranac study wherein of 11 mice inhaling long fiber asbestos, 81.8% developed tumors in their lungs, compared with an 18.8% rate in mice exposed for comparable periods to other dusts. Gardner concluded "the incidence rate 81.8% is excessive." (Exhibit 41, letter, February 24, 1943, Gardner to Brown, p. 8). He wrote that these observations were "suggestive but not conclusive evidence of a cancer stimulating action by asbestos dust." Gardner also noted that the tentative standard of 4-5 MPPCF "is probably unreliable" because the measurement methodology used did

not collect "most of the fibers that are the source of the hazard." (Exhibit 41, letter, February 24, 1943, Gardner to Brown, p. 10).

36. Gatke Corporation, one of the sponsors, began pushing for publication of a Saranac report because it indicated that damage was caused by longer fibers, which could be best filtered from air breathed through use of respirators. (Exhibit 42, letter August 12, 1946, T. Gatke to J.F.D. Rohrback of Raybestos-Manhattan). Gatke envisioned such a report "without injections of possibilities of cancer, etc., etc.," with which the companies could combat compensation claims.

37. J-M as well was pushing for publication, because there was a "real ferment underway in Quebec on the whole subject of industrial health," with people taking positions that might get the mining industry, and J-M in particular, "into real difficulties." (Exhibit 43, letter June 1, 1948, J.P. Woodard to A.J. Vorwald, bcc: Lanza).

38. Gardner died suddenly in October 1946. By the year's end, Lanza was made a member of the Board of Trustees of the Trudeau Foundation, parent of the Saranac Laboratory. (Exhibit 1, Castleman, p. 5). Saranac sent Gardner's notes to Lanza for suggestions. Lanza wrote Kenneth Lynch, of the Medical College of the State of South Carolina, seeking his assistance. (Exhibit 44, letter December 6, 1946, Lanza to Lynch). Lynch agreed to look at the material. (Exhibit 45, letter December 9, 1946, Lynch to Lanza).

39. A meeting of J-M executives and Lanza took place on January 21, 1947, to hear Lanza's report on Saranac. Lanza reported on his dealings with Dr. Lynch to see if Gardner's work could be put together in publishable form. J-M was of the view that the company had a definite job to do in Canada to counter the effects of a lot of propagandizing done in relation to asbestos dust, and a report could be of material help. (Within a month, a major strike would start at J-M's mine and close down most of the asbestos mines in Canada for five months.) Brown reminded the group that no publication could take place without the companies' consent, and he hoped Lynch would not include objectionable material; for example, anything about the relationship between asbestos dust and cancer. Lanza assured him that any report prepared by Lynch first would be submitted to J-M before being published. (Exhibit 46, Minutes of Meeting Held January 21, 1947, by J.R. Hamilton).

40. On March 18, 1947, Manfred Bowditch at Saranac wrote to Brown in response to his March 12 letter, and listed major points of Gardner's notes which had been transcribed and sent to Lynch. Among them was paragraph 4, that 81.8% of the mice inhaling long fiber asbestos developed lung cancer. (Exhibits 47; Exhibit 48). Brown replied under date of March 21, 1947, explaining that he was "very much concerned by paragraph numbered 4," as to which, in a blind bcc to J-M executive Vice President J.P. Woodard, the usually carefully spoken Brown wrote, "The finding referred to looks like dynamite." (Exhibit 49).

41. Lynch decided that the partially completed manuscript could be and should be published just as Gardner had written it, with an explanation of his sudden demise. (Exhibit 50, letter June 30, 1947, Lynch to Lanza). Lynch sent the manuscripts back to Lanza, arranged, joined, and titled as a single publication. (Exhibit 51, letter July 23, 1947, Lynch to Lanza). Dr. Lynch adhered to the view, which he expressed to Lanza, that Gardner's material was publishable as it stood, and revisions by others might not truly represent him. (Exhibit 52, letter August 7, 1947, Lynch to Lanza). Dr. Herbert Abrams, Chief of the Bureau of Adult Health at the time this occurred, later wrote: "How many lives would have been saved if Gardner's observations including those on lung cancer and asbestos had been reported without censorship?" (Exhibit 53, "Some Hidden History of Occupational Medicine," p. 27).

42. Saranac prepared a report dated September 30, 1948. It reflected, in paragraph 75, the "striking feature" that 9 of 11 mice got tumors, and in paragraph 92, that Gardner's notes "called attention to the high incidence of lung cancer among mice inhaling long-fiber asbestos." (Exhibit 54).

43. The companies called a meeting at Johns-Manville's Boardroom for November 11, 1948. (Exhibit 55, letter October 27, 1948, V. Brown to companies). The meeting resulted in the unanimous opinion of the asbestos industry executives that the references to cancer and tumors should be deleted, as a point they would insist upon. All copies of the draft report were to be returned. (Exhibit 56, letter November 12, 1948, V. Brown to American BrakeBlok). Dr. Lanza agreed to take up with Saranac the matter of revising the report and putting it in the shape they had agreed upon. (Exhibit 57, letter November 30, 1948, J.P. Woodard to T. Gatke).

44. In a December 14, 1948 letter to Saranac Director Arthur Vorwald, Lanza instructed "that all references to cancer or tumors should be omitted," as well as any related tables. (Exhibit 58, letter December 14, 1948, Lanza to Vorwald). And they were. Dr. Vorwald's marked up copy shows the offending sections stricken out (Exhibit 59, Revised Report). A revised report was urgently needed in Canada, (Exhibit 60, letter December 16, 1948, Lanza to Vorwald), and was available by March 3, 1949. (Exhibit 61, letter March 3, 1949, V. Brown to American BrakeBlok and others).

45. As indicated by Met Life letterhead, Dr. Lanza was an employee of Met Life when he requested the deletions regarding all references to cancer and tumors. (Exhibit 58)

46. Dr. Harriet Hardy, a famous pioneering doctor in the industrial medicine field, met with Gardner at Saranac in the summer of 1946. Much later, she and Dr. Egilman published information that Gardner's animal experiments indicated that asbestos caused cancer. Gardner told Hardy that the research sponsors would not permit him to publish that information. (Exhibit 62, Aaron Tr., 2-13-01, pp. 174-175; Exhibit 63, "Corruption of Occupational Medical

Literature: The Asbestos Example"). Hardy told me Dr. Gardner had tears in his eyes when he told her about this in 1946.

47. The final version of the Saranac study was published in 1951 in the A.M.A. Archives of lndustrial Hygiene and Occupational Medicine, authored by A.J. Vorwald, T.M. Durkan and R.C. Pratt, with no references to cancer. (Exhibit 64). The Saranac study as published stated that it presented for the first time a complete survey of the entire experimental investigation done by Dr. Gardner. This was not true. The published paper left out the information about cancer, and it left out Gardner's remarks that the TLV was unreliable because it was based on flawed sampling methodology.

48. The published Saranac report received relatively wide circulation. (Exhibit 65, letter June 11, 1951, Smith to McGraw). It won the Industrial Medical Association's Merit in Authorship Award, and implied by omission that experimental animal studies failed to provide evidence that asbestos was carcinogenic to humans.

49. The deletion of the reference to cancer in the Saranac study published in 1951 was significant because it allowed some people to infer that there was no problem of cancer in relation to asbestos, particularly since the published study represented itself as providing a comprehensive report of the studies that Saranac had done on asbestos. It is also important to recognize that Dr. Stokinger, a member and later head of the TLV committee, published his view in 1956 that asbestos was not carcinogenic in reliance, in part, on representations made by Dr. Lanza. In fact, the flawed information from the published Saranac study continued to be widely cited in subsequent years, including in the asbestos TLV "documentation" published in 1962 and 1966 that failed to mention any connection between asbestos and cancer. (Exhibit 66, Documentation of Threshold Limit Values, ACGIH, pp. 11-12) Moreover, in 1972, NIOSH continued to cite the flawed study. (Exhibit 67, "Criteria for a Recommended Standard . . . . Occupational Exposure to Asbestos" by NIOSH dated 1972, p. 35)

50. As this paper went to press, Vorwald was contracted to do another experimental asbestos inhalation study on mice by the Quebec Asbestos Mining Association (QAMA). This work was agreed to in November 1950, at a meeting attended by a Johns-Manville executive, Dr. Lanza, Dr. Vorwald, and the QAMA lawyer (Exhibit 1, Castleman, p. 67). The study started in March of 1951. The QAMA study was strongly positive, but it was suppressed and the 5.7 relative risk of the asbestos-exposed mice was not publicly disclosed until 1995 by Vorwald's successor at Saranac (Exhibit 1, Castleman, p. 68-69).

51. The TLVs, including the TLV for asbestos, were adopted by the American Conference of Governmental Industrial Hygienists ("ACGIH") starting in 1946. They were promoted as and were understood by many as stating a safe level of exposure. The deletion of information about cancer from the published Saranac report is especially important, in that if a

substance causes cancer there is no safe level of exposure. But, if TLVs for carcinogens were to be set at zero, or if they were to be dramatically lowered as recommended by U.S. authors for carcinogens including asbestos in the 1950s, sales of asbestos-containing products could drop drastically, which is eventually what happened. (Exhibit 30, Aaron Tr., 2-05-01, pp. 89, 102-105). I have researched and written on the subject of the TLVs, and am knowledgeable about them. Worker health standards in industry, enforced by the government, had been inevitable since the New Deal era. State government agencies in California and other states were starting to codify limits on worker exposure to airborne dusts and gases in the 1930s, initially listed as advisory limits. U.S. consumption of asbestos dropped dramatically from its peak after 1973, following increased public and media awareness about asbestos, and government regulation by new federal authorities involving constant downward pressure on permissible exposure limits. (Exhibit 1, Castleman, pp. 730-731).

52. Lanza retired from Met Life at the end of 1948. He took a position at New York University, and Met life paid his expenses in the early 1950s. (Exhibit 62, Aaron Tr., 2-13-01, pp. 120-121).

53. At the First National Cancer Conference, in 1949, there was a panel discussion on asbestos and cancer. The published account read, "The clinical work of Lanza and the experimental work of Vorwald have not revealed any carcinogenic properties which can be attributed to asbestos." Evidently, these doctors did not present Saranac's 81.8 percent lung cancer rate in mice and allow the participants at the conference to draw their own conclusions on how significant it was that this exceeded Gardner's comparison-dusts-group rate of 18.8 percent. (Exhibit 1, Castleman, p. 88).

54. Lanza was a member of the Cancer Prevention Committee of New York and spoke at the group's meeting in 1950, where cancer in asbestos workers was discussed. In the published discussion, Lanza took issue with the U.K. report that 13 percent of 235 workers dying with asbestosis also had cancers of the lung and pleura. He said these lungs were "searched with a microscope" and suggested that there might be a lot of these tumors found "in any population" subjected to "the same minute scrutiny." (Exhibit 1, Castleman, pp. 70-71). Lanza's unique viewpoint on this was cited by another doctor reporting a case of asbestosis and lung cancer, who believed that in order to prove a material was carcinogenic, it had to be demonstrated in experimental animals. Like the rest of the world outside of a small circle including Lanza, this writer did not know of the unpublished Saranac experiments on asbestos and cancer. (Exhibit 1, Castleman, p. 92; Exhibit 68, "Asbestosis and Lung Cancer in the Case of an Asbestos Spinner").

55. In 1952, Lanza published a paper entitled "Asbestosis" in which he noted that authorities in Great Britain regarded cancer of the lungs as a frequent sequelae to asbestosis. He wrote that this is not the experience in Canada or the United States. Lanza related that he had

just spent several days with the Johns-Manville medical director Kenneth Smith at the firm's large mine in Asbestos, Quebec. Smith had showed him X-rays and told Lanza there was no unusual experience with lung cancer. Lanza suggested that the asbestos fibers in various parts of the world might have different pathological results. (Exhibit 69, "Asbestosis", p.1).

56. The U.S. National Cancer Institute held a Conference on Environmental Carcinogens" in September, 1955. The expert panel on asbestos consisted of Lanza's fellow NYU faculty member W.E. Smith, Dr. Vorwald, and Dr. Kenneth Smith of Johns-Manville. The panel rated the epidemiological evidence with a question mark and indicated that there was "0" experimental data available. Dr. W.E. Smith was unaware of the Gardner cancer experiment until 1989, and he communicated to me that it would have been of interest and importance at the time it was done. (Exhibit 1, Castleman, p. 72). When he heard of efforts to get NYU to rename the Anthony Lanza Research Laboratories in the late 1980s, Smith commented that having the university laboratories named after Lanza was "rather like dedicating a synagogue to Hitler." (Exhibit 70, Letter W. Smith to C. Patrick, April 16, 1988). Dr. Harriet Hardy agreed that NYU should change the name of the Lanza building after seeing some of the papers that had been revealed in litigation. "I shiver to think what the good Lord did with Lanza and Vorwald," she wrote. (Exhibit 71, Letter H. Hardy to B. Castleman, May 15, 1987). The building was renamed in 1992 with no public announcement, the NYU press office told me in 1994.

D. Braun/Truan Report

57. In 1956/1957, J-M's president was on the board of trustees of the IHF. Met Life's Dr. Shepard was a member of its medical committee. (Exhibit 72, Industrial Hygiene Foundation, "Activities," 1956...1957). Met Life also was involved with this IHF epidemiology study because it owned Sun Life Assurance Company of Canada, which made available data for the study. (Exhibit 73, Aaron Tr., 2-14-01, pp. 183-184; Exhibit 74, Quebec Asbestos Mining Association, "An Epidemiological Study of Lung Cancer in Asbestos Miners," Braun and Walmer, September 1957, pp. i-ii). The IHF did this study of asbestos miners for the Quebec Asbestos Mining Association. The original, unpublished report said that the 12.5 percent rate of lung cancer among workers dying with asbestosis was significantly larger than would be expected. The report suggested this may have been due to underreporting of asbestosis, which, if such a statement was published, would have reflected badly upon industry medical clinics that had been publicly praised by Lanza. (Exhibit 74, Quebec Asbestos Mining Association, "An Epidemiological Study of Lung Cancer in Asbestos Miners," Braun and Walmer, September 1957, pp. 53-54; Exhibit 69, "Asbestosis").

58. For publication, the draft report was modified to delete disclosing the lung cancer rate among workers dying with asbestosis. (Exhibit 75, letter December 30, 1957, K. Smith of J-M to I. Sabourin). The final report, entitled "An Epidemiological Study of Lung Cancer in

Asbestos Miners," by Braun and Truan, was welcomed for publication by editor Herbert Stokinger and published in the AMA Archives of Industrial Health. It concluded, instead of the original finding that the lung cancer death rate in asbestotics was greater than expected and significant, that on the basis of what was represented to be complete and reliable data, the miners overall "do not have a significantly higher death rate from lung cancer than do comparable segments of the general population." (Exhibit 76, p. 651).

59. Dr. Stokinger was in the 1950s a key member of the Committee on Threshold Limits of the ACGIH, which published the TLVs. He would become Chairman of the Committee from 1962 through 1977. (Exhibit 1, Castleman, pp. 96-97). Stokinger was pleased to see that the conclusion of the Braun/Truan report was against the association of lung cancer and asbestos. (Exhibit 77, Letter Jan. 20, 1958, H. Stokinger to D. Braun). Stokinger had himself relied on the 1952 presentation published by Lanza, in stating that workers in the US asbestos industry did not get cancer as did those in the European industry. (Exhibit 30, Aaron Tr., 2-05-01, pp. 128-129; Exhibit 78, Stokinger, "Standards for Safeguarding the Health of the Industrial Worker," published in Public Health Reports, January 1955, p. 75; Exhibit 79, Stokinger, "Toxicologic Aspects of Occupational Hazards," Annual Review of Medicine 7: 177-194, 1956).

60. Dr. Vorwald was on the ACGIH TLV committee from 1951-1956. He apparently did not disclose the Saranac experimental cancer findings to that committee.

E. Met Life's Influence

61. In 1927, Met Life was the largest insurance company, indeed the largest financial institution, in the world, according to Haley Fiske, its president. Its assets totaled $2.25 billion. It insured one-fifth of the entire population of the United States and Canada. "The Metropolitan- a Mother's Care for the Millions that Own It," address of Haley Fiske, November 21, 1927, Los Angeles, California. (Exhibit 80).

62. A book commissioned by Met Life in 1943 characterized the company as "the largest financial corporation in the world." (Exhibit 81, Dublin, "A Family of Thirty Million," p. 5 Metropolitan Life Insurance Company 1943). At the end of 1938, it had assets of nearly $5 billion. (Exhibit 82, Marquis James, "The Metropolitan Life: A Study in Business Growth," p. 349 (Viking Press 1947)).

63. Met life invested in asbestos companies, including in particular J-M from 1929-1944, 1947-1965 (1966 is missing) and 1967-1970. It invested in numerous others from 1938-1974. (Exhibit 83, letter, February 7, 1991, Ms. Duprel at Maples-Lomax to B. Castleman summarizing Met Life annual statements).

64. Met Life provided a line of credit to J-M in the amount of $25 million, annually, from 1947-1963. (Exhibit 84, 1948 J-M Annual Report, p. 11).

65. The chairman of the board of Pittsburgh-Coming was also the chairman of the board of Owens-Coming Fiberglas, both of which were companies making asbestos-containing products. That person was a member of the Met Life board of directors. (Exhibit 62, Aaron Tr., 2-13-01, p. 146).

66. Met Life sold group life insurance to the companies, and offered accident and health coverage to some, with an extra loading for asbestos companies such as J-M. (Exhibit 1, Castleman, pp. 654-655).

67. Met Life had what has been characterized as the premier, the biggest, the best, and in some cases the only insurance consulting firm on occupational health issues in the United States. (Exhibit 30, Aaron Tr., 2-05-01, p. 94). Lanza had tremendous influence in the community of occupational health physicians. Lanza and Drs. Gardner and Vorwald were among the most well- recognized authorities on dust diseases of the lungs in the country. (Exhibit 30, Aaron Tr., 2-05-01, pp. 115, 155).

68. In the time of crisis that led to the formation of the IHF, many of the largest industries in the country looked to Met Life as the place to go for help "in dealing with the problem that at present is a serious menace to them from an economic standpoint." (Exhibit 85, Memo, February 27, 1935, Lanza to Armstrong).

69. Soon after Lanza started working at New York University, he brought over Dr. Gerrit Schepers from South Africa for training. Dr. Schepers went around to asbestos plants and mines and wrote up his findings, intending to provide them to his government. This report was required by Lanza as a "thesis" to complete work at NYU. Then, Lanza brought Schepers to see J-M corporate attorney Vandiver Brown, who was upset about the part on cancer in the workers and told him to suppress it. The report did not see the light of day after it was submitted to the government in South Africa, where asbestos mining was a major industry. (Exhibit 1, Castleman, pp. 64-66; Exhibit 86, Testimony of Gerrit W.H. Schepers, M.D., Bob Alan Speake v. Johns-Manville, No. i60993, December 14, 1981).

70. By 1948, a Met Life policyholder manufacturing chromates had had "a number of claims due to lung cancer due to chrome." In 1951, Lanza met with the US Surgeon General concerning an epidemiology study co-authored by Dr. Wilhelm Hueper of the National Cancer Institute. Lanza stressed that the government needed industry cooperation, and following this meeting, Dr. Hueper was forbidden to do any more investigations into occupational cancer in American industries. The chromate study was published without the name of Hueper as an author, enabling the industry to argue that the federal government had withheld its endorsement over disagreements with the report. This is discussed in Lanza's correspondence with executives

at Mutual Chemical and Diamond Alkali, Met Life policyholders. (Exhibit 1, Castleman, pp. 73-74).

71. In 1947, a study was planned by state government officials into the silicosis hazard at Johns-Manville's diatomaceous earth facility in Lompoc, California. This was prevented when Lanza gave assurances that the dust problem was under control. Met Life Vice President William Shepard gave similar assurances to Dr. Herbert Abrams of the California Department of Public Health, even as workers' compensation claims were being filed by employees. Lanza and Shepard continued to oppose disclosure, independent study, and dust control requirements at Lompoc. (Exhibit 1, Castleman, p. 654; Exhibit 87, Testimony of Herbert K. Abrams, MD, In re: Asbestos, No. 92-C-888, April 19, 1994; Exhibit 53, "Some Hidden History of Occupational Medicine").

72. At New York University, Lanza became enraged when Dr. W.E. Smith brought him an unpublished report on high lung cancer rates at a British asbestos plant in 1954. Smith wanted to do experimental animal studies on asbestos and cancer (he did not know of the suppressed Saranac studies). Dr. Smith was soon fired by the university, and he believed that the exchange with Lanza about asbestos was the immediate cause of that. (Exhibit 1, Castleman, p. 85; Exhibit 88, Deposition of W. Smith).

73. An indication of Met Life's influence appears in a "Claims Medical Manual" of Aetna Life and Casualty, of December 1978. That manual reflects that "Lanza's work suggested that asbestos was not really a problem and it had the effect of dampening research in the area." (Exhibit 89).

74. Philip Enterline was a professor of biostatistics at the University of Pittsburgh, Pennsylvania. He has given an affidavit dated March 7, 1991 (Exhibit 90), reflecting that he reviewed all the medical literature published on asbestos and cancer from 1934-1964, prepared a book in 1978, updated in 1980. He conducted the review at the request of the Asbestos Information Association. He had reviewed the 1951 article by Vorwald and Pratt. He had written that in the United States there had been a twenty-year "international lag" in the acceptance of the causal connection between asbestos exposure and cancer. The affidavit reflects that he had recently reviewed the unpublished Gardner monograph ("Outline of Proposed Monograph on Asbestosis") (Exhibit 41), which contained the findings about the 81.8% tumor incidence in mice exposed to asbestos, an incidence Gardner reported was excessive. Enterline noted that finding was not reported in the 1951 published article by Vorwald and Pratt. He gave the opinion that if these Gardner findings had been published in a reputable scientific journal, that would have accelerated in this country the acceptance of a causal relationship between asbestos and cancer. I agree with that opinion. (Exhibit 30, Aaron Tr., 2-05-01, pp. 111-116).

III. MET LIFE AND JOHNS-MANVILLE

A. Met Life Agreement to Perform Industrial Hygiene Services

75. Lanza attended a meeting on November 28, 1933 at J-M's offices. Lanza indicated that if his survey could be approved, Met Life could be counted upon to take dust counts at various plants, do x-ray examinations of employees, and make recommendations as to dust control. (Exhibit 20, Memo November 28, 1933).

76. At a meeting on January 4, 1934, J-M and Raybestos-Manhattan officials advised of their decision to avail themselves of the assistance offered by Met Life. Met Life also agreed to train company employees to make dust counts. Lanza pointed out that Met Life representatives were as qualified as any to advise about respirators. (Exhibit 21, Memo January 4, 1934).

77. J-M did not have its own corporate medical director until 1952.

78. On August 29, 1933, J-M's S.A. Williams, Vice President, forwarded to A.R. Fisher, manager of the Manville, New Jersey J-M plant, a "Personal and Confidential" letter enclosing a copy of questions asked of Lanza by J-M's physician at its Waukegan, Illinois plant and his answers "verbatim." (Exhibit 91).

Question 1 dealt with use of respirators. Lanza advised, in substance, that they were not satisfactory.

Question 2 and the Lanza answer were as follows:

Question No. 2.

> Do you agree with my recommendation that employees definitely be made aware of the fact that asbestos dust is hazardous to their health idea is that a poster be placed at one or more conspicuous places in the department, signed by the physician, stating that the dust is injurious, advising the continuous use of respirators while at work and cleansing of hands before eating lunch and after work.
>
> Your comment on this please and particularly is there any additional advice that should be given?
>
> Answer:
>
> This is partially answered by No. 1, I doubt if the hazard is sufficient to justify warning posters as might be used where lead, benzol, or carbon monoxide are

concerned. This is especially true in view of the extraordinary legal situation. If anything is said at all, it would be better to make a general statement that the Company is taking steps to control the amount of dust in the air for general health purposes. Any action contemplated at Waukegan would probably be influenced by the experience at other plants of the Company.

79. It is important to understand that when Dr. Lanza advised J-M not to warn employees about the hazards of asbestos, he was considered one of the leading authorities in the United States on occupational dust diseases of the lungs.

80. J-M retained that policy not to warn its workers about asbestos hazards, which followed from the advice of Lanza, for many decades, at least up through the time when OSHA came into being in the early 1970s. J-M's policy of not warning employees of the hazards of asbestos, which was established in coordination with Lanza and MetLife, was not only significant to J-M employees who continued to be exposed to asbestos but also the family members and neighborhood residents who continued to be exposed as a result of clothing being worn home and environmental contamination.

81. Clearly, the J-M physician was proposing to warn the workers about the hazards of asbestos dust. Dr. Lanza advised against providing such a health warning about asbestos and recommended instead a vague statement that J-M was controlling the dust for health purposes, with the effect of misleading the workers. This was prescribed by Dr. Lanza "in view of the extraordinary legal situation," notwithstanding the medical reality of the health hazard from asbestos dust.

82. In the Waukegan document, Question 5 to Lanza and his answer were: Question No. 5

I have made a diagnosis of asbestosis on an employee who has been working in the card room of the textile department six years. This place is extremely dusty. He is not disabled. In my judgment the best disposition of such a case is to remove him from the dust and give him a job in some other part of the plant. From your remarks in Chicago I believe this was your advise [sic] as to the disposition of such cases.

Answer:

It is difficult to answer this question. I think it would depend upon the man's age, the nature of his work, his length of service, and other considerations which might have some bearing. If he is well along in years and shows no disability, it may be just as well to leave him alone. One of the difficulties and vexations in trying to deal with the problems of pneumoconiosis is that economic as well as production factors must be balanced against the medical factors.

Lanza thereby advised J-M's plant physician to leave some workers with asbestosis in dusty operations, evidently without even being informed of their diagnoses, in weighing economic and production factors against medical factors.

B. The Manville 1945 Hygiene Inquiry

83. In 1945, the War Production Board ordered the New Jersey Department of Health to investigate the J-M plant at Manville on the suspicion that there were unhealthy working conditions there. Met Life interceded by telling the Director of Industrial Hygiene for New Jersey that the asbestosis hazard at that plant was under control and had been for many years. New Jersey accepted these findings and reported to the War Production Board. The case was closed. (Exhibit 92, "Annual Report of the Industrial Health Section; 1945," pp. 1-2). The Met Life allegations stood in stark contrast to the confidential Hemeon study of the same plant in 1947, which found potential cases of asbestosis amounting to about 20%, and poor dust conditions consistently throughout the plant. (Exhibit 1, Castleman, pp. 254-255).

C. J-M Followed the Met Life Suggestions

84. J-M followed the path set for it by Met Life. It did not post warnings in its plants or otherwise warn its workers about the dangers of asbestos dust. J-M did not place even the mildest health warning labels on its asbestos insulation products until 1964 and on its sacks of asbestos until 1969. (Exhibit 1, Castleman, p. 611).

85. J-M did not inform its employees when their medical examinations revealed asbestosis, as a matter of company policy, until 1971 or 1972, at least at J-M's Pittsburg, California plant. (Exhibit 1, Castleman, p. 612; Exhibit 93, Sworn Statement of Wilbur Ruff, Jan. 11, 1978). In 1949, J-M's Smith found four normal x-rays out of 708, of Canadian miners, and decided not to notify workers with asbestosis, so the company could benefit from their experience. (Exhibit 30, Aaron Tr., 2-05-01, p. 142).

86. Mr. Charles Roemer has submitted an affidavit in which he described a meeting with J-M officials, including Vandiver Brown and the J-M president, Lewis Brown, in 1942 or 1943. Vandiver Brown advised that J-M's physical examination program produced evidence of asbestos disease among workers. It was J-M's policy to not tell employees of the positive x-ray findings. Brown pointed out that if the workers were told, they would stop working and file claims against J- M, and it was J-M's policy to let them work until they quit work because of asbestosis or died as a result of asbestos-related diseases. (Exhibit 94, Charles H. Roemer Affidavit, September 29, 1982; reprinted in Exhibit 1, Castleman, pp. 160-161).

My book, at p. 489, also contains an excerpt from a deposition of Mr. Roemer, (Exhibit 95):

> I'll never forget, I turned to Mr. Brown, one of the Browns made this crack (that Unarco managers were a bunch of fools for notifying employees who had asbestosis), and I said, "Mr. Brown, do you mean to tell me you would let them work until they dropped dead?" He said, "Yes. We save a lot of money that way."
>
> Testimony of Charles H. Roemer about the meeting of Unarco officials with Johns-Manville President Lewis Brown and his brother, Vandiver, in 1942 or 1943. (Deposition taken April 25, 1984, Johns-Manville Corp. v. United States, U.S. Claims Court Civ. No. 465-83C.)

87. J-M's policy to not advise its workers of their asbestos-related illnesses continued, and became self-perpetuating, with ever increasing numbers of workers who were affected, were not told, and were still working. A January 12, 1963 internal Manville document, written by a plant official, reflects the dilemma:

(1) From a moral standpoint, employees identified as having pneumoconiosis should be told of their condition promptly.

(2) From an ethical standpoint, Doctors should tell these people of their condition promptly.

(3) From a practical standpoint, if we tell 25 persons they are pneumoconiotic within the next two to six weeks, there may be an undesirable panic or near-panic.

(Exhibit 1, Castleman, p. 186; Exhibit 96, January 28, 1963 "Confidential" memorandum entitled "Pneumoconiosis Cases"). This same memorandum reflects there were 71 "red slip" cases, people who had "been medically identified as having one of three stages of pneumoconiosis," and approximately 225 "pink slip" cases, people "possibly" showing signs of pneumoconiosis, where in each case a doctor advised management to keep the employee out of toxic dust. Management wouldn't accept the consequences of telling all these workers about their "possible" condition, so it was decided to collect all "pink slips" from safety and personnel departments, and destroy them, along with all records or codes that refer to "pink slip" cases. The only information about "pink slip cases" was to be in the medical records. They'd have had to notify people in groups of 25 or more to make a dent in the total of 225 pink slip cases.

88. A 1979 J-M memorandum to the Board Chairman noted that the company's credibility with legislators, juries, and the public was being undermined by evidence contrary to J-M's public statements. One example given was that the "J-M position" was that, since 1964 the corporation had "come clean" with employees about asbestos hazards. The memo contrasts this with the "FACT" that, according to employees, people worked for 35 years at J-M and were never told about the dangers, and it was company policy into the early 70's not to tell a person

about his illness. (Exhibit 97, January 12, 1979 J-M Internal Correspondence, C.G. Links to J.A. McKinney).

89. I have been involved in historical research on asbestos and expert testimony in asbestos litigation for over 30 years, and I have never encountered a case where an historic document I had been presented with turned out to be forged or fraudulent. I therefore have every reason to believe that the historic documents referred to herein and in my writings are all true copies and are exactly what they appear to be.

CONCLUSIONS

1. J-M knowingly inflicted asbestos dust upon its workers at levels that it knew caused disease and death, for decades commencing no later than 1929 and continuing through at least the promulgation of the first federal asbestos regulations by O.S.H.A. in the 1970s. It did so deliberately, not warning its workers about the hazards, and leaving them in dangerous asbestos dust conditions when management knew many of them suffered from asbestos- related diseases.

2. Met Life knew that the conduct of J-M constituted a breach of its obligations to its workers and created an unreasonably dangerous condition for its workers' families and those living in the immediate vicinity of J-M manufacturing plants.

3. Met Life gave substantial assistance to J-M in breaching its duties to its workers and creating this unreasonably dangerous condition, by, among other things referred to above, (a) knowingly assisting in the development and publication of unsafe TLV of 5 MPPCF; (b) deliberately doctoring the published report of its 1929-1931 plant studies, at J-M's behest, to remove the information that the safe level for asbestos dust should be less than for silica, which Met Life evidently knew to be true, (c) by carrying out the wishes of J-M and other asbestos companies to instruct Saranac to delete from its published study the information that asbestos caused cancer in mice; and (d) by advising J-M to not warn its workers about the hazards of asbestos dust, and to not remove affected workers from the dusty conditions.

4. Met Life supplied information of certain facts about the results of exposure to asbestos dust, but suppressed other facts, in particular the unsafe nature of the TLV, and the information that asbestos had been shown to cause cancer, such that what it did supply was likely to mislead people by reason of the failure to communicate the facts suppressed.

5. Met Life undertook to speak about health effects of exposure and safe levels of exposures but suppressed alarming material facts.

6. Met Life knew that J-M was consciously or without reasonable care concealing material facts regarding the dangers of asbestos, and gave substantial assistance to J-M in doing so.

7. The conduct of Met Life substantially increased the risk of harm to J-M plant

workers, their families, and those living within the immediate vicinity of J-M manufacturing plants.

I certify that the foregoing statements made by me are true. I am aware that if the foregoing statements made by me are willfully false I am subject to punishment.

Executed this ___ day of August, 2016, at Garrett Park, Maryland.

_____

Barry I. Castleman, Sc.D.