

The Deposition of Richard A. Lemen, Ph.D.
Conducted 7/15/99

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- Page 10 As the Deposition begins Dr Lemen states that he does have a copy of his report entitled Asbestos Timetables and Their Relevance to Westinghouse.
- Page 11-12 Dr. Lemen describes the report as a set of Westinghouse documents that have been incorporated into the existing timetable so that you could see the dates as they relate to the state of the are knowledge that is presented in the timetable. This is the same report as is being used in the Eisenreich case.
- Page 13 The table was completed on April 23, 1999.
- Page 14-16 Attorney Tierney raises objections to Lemen answering whether he received any instructions from a member of GPJ&W regarding the completion of his report. Strategic jousting ensues.
- Page 17 Some discussion takes place regarding the documents referenced in the report. Dr. Lemen has a stack of documents in front of him that are not individually referenced in the report. Dr. Lemen states that he obtained some of the documents from Mr. Roach's firm and some from GPJ&W.
- Page 18 The stack includes documents that have been provided to defense counsel as well as documents that defense counsel has not been provided with. The documents that defense counsel was not provided with include two with 151 abstracts (named 753 = 151 Abstracts) and another includes 1170 abstracts. 753 = 151 abstracts is handed over and marked Exhibit 2.
- Page 19 Exhibit 2 consists of the abstracts that Dr Lemen received from GPJ&W that deal with the Industrial Health Foundation.
- Page 22 The larger stack of 1170 Abstracts is handed over and marked defense Exhibit 3.
- Page 23 The IHF membership list is also attached and marked Exhibit Defendant's Exhibit 5.
- Page 24 The Buffalo Large Motor Division document on asbestos is marked Exhibit 6. The Kansas City Works is marked Exhibit No. 7. Discussion of the OSHA by Westinghouse is No. 8. A warning label dated March 6,

1970 is marked No. 9. Another document that talks about government law and asbestos exposure is marked No. 10.

Page 25 Another document dealing with Transite pipe products is marked Exhibit 12. Another on accident prevention at the Bloomfield Works is marked No 13. Another document referencing Westinghouse Bldg. No 2325 and the use of asbestos in insulation materials is marked No 14.

Page 26 Another one dealing with East Pittsburgh accident prevention is marked No 15. Another on Westinghouse Bldg. No. 2016 is marked No.16. Another regarding employee exposure to asbestos at the Lester Plant is marked No 17.

Page 27 A 1984 letter from Buffalo talking about a recent shop safety tour talking about a recent shop safety tour revealing the continued use of asbestos material is marked No 18. Another letter describing 1976 OSHA standards is marked No 19. Letter from senior attorney for Westinghouse Electric tic Organization Research Counselors is marked No 20.

Page 28 A document talking about power and the spectacular story of energy in the USA is marked No. 21. A document on accident prevention referencing asbestos fiber concentrations is marked No 22. Document on Westinghouse's response to all interrogatories is marked No. 23.

Page 29-42 Document dealing with final copy of OSH Requirements – 26.
Summary of Westinghouse compliance with Westinghouse EPA TSCA dated November 1992 – 25.
Internal Memo from Westinghouse Bldg. 1558 – 27.
Table of different product grades from Westinghouse – 28.
Report t Westinghouse on Keen Insulation Contracting Division – 29.
Process specification sheet on thermal insulation – 30.
Application of block and plastic insulation instructions – 31.
Process specification, Application of Sheet Insulation Instruction - 32.
Air samples of asbestos cloth being cut – 33.
Evaluation of Asbestos Exposures at North Loop Turbine Number 1 Facility -- 34.
Asbestos Products and Usage – 35.

Materials evaluation pertaining to Johns-Manville Thermobestos fiber release – 36.
Correspondence in Johns-Manville talking about amosite exposure from Marinite – 37.
Another JM talking about amosite – 38.
Maranite and dust control – 39.
Johns-Manville on the sawing of Marinite – 40.
A document pertaining to JM refractory products and how hand powered tool are used extensively in the field to work Maronite sheets – 41.
Review of Documents at industrial hygiene – 42.

- Review of files in the industrial hygiene department – 43.
Westinghouse on Maronite – 44.
Brief summary of a 1 hour and 45 minute telephone conference meeting with headquarters concerning asbestos – 45.
Industrial Hygiene Objectives for the company – 46.
Industrial Hygiene files – 47.
Retention Guidelines for Industrial Hygiene files – 48.
Another pertaining to industrial hygiene – 49.
Yet another document pertaining to industrial hygiene – 50.
Industrial Hygiene record retention – 51.
Citation and notification policy – 52.
Personnel relations managers talking about the OSHA standard and their compliance with – 53.
Evaluation for Westinghouse of industrial hygiene by George D. Clayton & Associates – 54.
Document dealing with liability and contractors at the Kansas City Works – 55.
Internal Memorandum from the Buffalo Large Motor Division concerning worksheets and asbestos exposure – 56.
- Page 38 Exhibits 4 – 56 were not included in the timetable. Dr Lemen didn't feel it was necessary to change the timetable and add them. That is, they would not have changed the sequence or makeup of the timetable
- Page 39 A good way to characterize the documents is as background information
- Page 40 Dr. Lemen also presents a notebook that has documents in it that represent the entries in the timetable in chronological sequence.
- Page 41 The timeline itself has been marked Exhibit 1. Dr. Lemen's curriculum vitae is marked 57. A document regarding Mr. Roach's law firm and billing in this case to this point in time is marked Exhibit 58.
- Page 42 Dr Lemen provided all counsel with copies of all documents that dealt with his briefing book and a document dealing with a notebook on household exposure two weeks before the deposition. Since that time he has added one page to his briefing book.
- Page 44 The documents that Dr. Lemen provided counsel with, along with his notebook and timeline constitute a complete collection of the documents that he considers relevant to Westinghouse.
- Page 45 Dr. Lemen received all of the documents from either GPJ&W or Nix Roach. The documents constitute the written documentary evidence that Lemen considered in reaching his conclusions related to Westinghouse.

- Page 46 To the best of Dr. Lemen's knowledge he relied on no deposition transcripts or testimony to form his conclusions on Westinghouse.
- Page 47 Dr. Lemen testifies that there was evidence prior to 1972 that asbestos had very severe health effects and that the misuse of the material without protecting the worker was inappropriate. It is also the Dr.'s position that there are many other substances used in industry that if not contained properly would be harmful.
- Page 48 Dr. Lemen testifies that since the 5 million particle threshold limit value was the only guidance limit available in the '40s and '50s, an industrial hygienist using this value as his benchmark limit would be acting reasonably in the performance of his industrial hygiene task.
- Page 49 Document 6771 indicates that Westinghouse began its involvement with asbestos in 1908.
- Page 50 Westinghouse was not the only company using asbestos in 1908. Dr. Lemen draws no other conclusions from document 6771.
- Page 52 Mr. Weathersby refers to the December 18, 1984 document, which is a Journal of Occupational Medicine paper on The Konocide Club. Dr. Lemen has concluded from this document that Westinghouse was one of the founding members of the Konocide club. The club was formed by Phil Drinker to address research problems on the relation of dust to health. The Konocide Club was the predecessor to the Industrial Health Foundation. Westinghouse was a member from 1936 to 1984.
- Page 53 The Konocide Club involved some of the top names in industrial hygiene in the '30s. Other members included the Bureau of Mines, Department of Interior, Harvard School of Public Health, Metropolitan Life Insurance Company, Saranac Laboratory, and the University of Pennsylvania. At the time, the University of Pennsylvania was one of the leading universities in the study and treatment of the known pneumoconiosis. The department of health for the state of Connecticut was also a member.
- Page 54 Lemen does not think that Westinghouse was acting improperly by becoming a member of the Konocide club / IHF. In fact, it can be concluded that by being a member, Westinghouse was on the front edge of research of occupational health issues. Dr. Drinker and Warren Cook have been widely published concerning what they learned during the 30s and 40s. Dr. Lemen is not aware of anything that was learned during Westinghouse's participation in the Konocide Club that wasn't soon after offered to the public.

- Page 55 The Doctor is not aware of any evidence that Westinghouse's participation in the Club was an effort by Westinghouse to secret away things. The examining Attorney [Atty] next refers to the documents regarding the 1934 transactions of the National Safety Counsel [NSC] and asks that Lemen tell him what he know about the NSC. Lemen states that the NSC has a long history or interest in safety issues. They represented a broad array of professionals employed by government or industry.
- Page 56 Mr. Auel of Westinghouse served on the executive committee of the NSC from 1934 to 1935 and was also president. The NSC documents also refer to the Saranac Lake studies of pneumoconiosis and dust-producing diseases. Lemen suggests that the significance of these documents is that Westinghouse was a participant, they were an officer, represented as an officer; and that dust diseases were talked about in their presence.
- Page 57 The NSC had a very broad membership and were actively pursuing additional members. The NSC was a very public organization. It had sectional memberships and among these sections was the industry group. The industry group would have included people in the steel making industry.
- Page 58 Publications of the NSC were widely accessible; to acquire them an organization needn't have been a member. Lemen states that if Westinghouse had applied the knowledge that they gained from their membership, "it would have been a good thing."
- Page 59 Discussion begins regarding the deposition taken in 1992 of an early Westinghouse hygienist, Mr. Bickenstaff. Lemen has not read the entire deposition.
- Page 60 Lemen states that the importance of the Bickenstaff depo is that it demonstrates that Westinghouse was involved in organizations that were dealing with dust-related diseases and were aware of the research that was being conducted. They had access to publicly published information as well as unpublished
- Page 61 Due to their membership in the NSC, Westinghouse would have had earlier access to the information than the general public. The information attained by Westinghouse may have been superior to that attained by the general public in that they had the ability to speak with other members on how to interpret these studies and how these studies may apply to their work.
- Page 62 The IHF had a broad membership in the industrial community. The IHF also had a broad membership among academics. The meetings of the IHF were covered by the news media.

Page 63 Once again, Lemen states that if Westinghouse had applied the information that they gained from these two groups it would have been a good thing.

Page 64 Lemen is aware of no evidence that Westinghouse was an active participant in altering research results.

Page 66 Reference is made to a 1938 Westinghouse document. It is labeled 6715.

Page 67 Atty asks Lemen what conclusions that he made from document 6715. In hopes of speeding up the deposition, Lemen states that the conclusions that he made from the documents are documented in the timeline.

Page 68 Document 6715 is a product specification for blanket insulation. Dr Lemen does not know who constructed the blanket but the document does have the address of the manufacturer on it. The specification covers blankets, bags, or mattresses for removable heat insulation for steam turbine casings, valves and other parts. The insulation should be suitable for temperatures over 850 degrees Fahrenheit.

Page 69 Dr. Lemen has no information on any other blankets that may have been used for these applications, although other blankets may have been used. Reference is made to document 6716 that is an Air Hygiene Foundation document. There is no connection that Lemen makes between this document and Westinghouse other than Westinghouse was a member of the organization and "Westinghouse" being stamped on the copy.

Page 70 The stamp "Westinghouse" was on the document before Lemen got it. Lemen agrees that companies should attempt to keep abreast of developments in Worker's Compensation, injury schedules, and compensation schedules.

Page 71 Lemen states that it would be reasonable for a company to stay current with these developments and to apply the knowledge to prevention strategies within their own workforce. Lemen states that compensation law should be used as a tool to learn about prevention and to apply it. He also states that application of Worker's Compensation law is reasonable if it is used to prevent disease and injury in the workplace.

Page 72 - 73 Reference is made to documents 7398 and 7399 which are Medical-Engineering Control of Industrial Health Hazards by Lyle Hazlett and a Southern Medical Journal document dated November 1941, respectfully. Lemen agrees that it would be a good thing for a company to allow their medical director to publish current information on subjects such as the practice of industrial health.

- Page 74 Lemen does not conclude from reviewing document 7399 that Westinghouse was lagging behind in the area of industrial hygiene during the time period referenced in the document. Reference is made to document 1943.
- Page 75 Document 1943 is not relevant. Lunch Break. At this point discussion begins regarding document 1943 and the 32nd National Safety Counsel. 1943 is documentation of the transactions of the NSC for that particular year.
- Page 76 Atty quotes Lemen as saying "The use of water repellant asbestos insulation has recently replaced some types of material formerly used for ship work." Lemen questions whether this material would have had any specific relevance to the steel mill setting although he states that it may have. He thinks that it may have been used in applications other than as shipboard. Lemen does not know what form the water-repellant insulation came in.
- Page 77 It is Dr. Lemen's position that the responsibility of protecting workers lies with both the manufacturer and the end product user. The manufacturer should properly label their products and the end product user should follow those instructions.
- Page 78 Lemen feels that although the manufacturer is in the best position to research the development of safer products, the end product user is in the best position to do things like engineering controls and dust monitoring. These facts, in the opinion of Dr. Lemen, do not alleviate the responsibility of the manufacturer to warn of the potential hazards from the use of their product. Lemen's view is that people in the proximity of the user of these products may be exposed to airborne asbestos dust.
- Page 79 Lemen agrees that warning labels may be removed for some reason before reaching their destination. Lemen feels that large steel mills with possibly 10s of thousands of employees should have people designated as safety personnel.
- Page 80 Atty offers that there was training available for safety personnel during the 40s through the Department of Labor or its equivalent or possibly industrial commissions. Lemen agrees.
- Page 81 Lemen agrees that Westinghouse, at least according to documentation, has a history of providing safety personnel for its facilities. Reference is now made to document 6981 that is a 1946 memo from Barnes to the works manager in South Philadelphia. Lemen acknowledges that the document appears to indicate that Barnes is discussing potential health hazards with

the use of asbestos for the manufacturing of lagging at a Westinghouse facility. Lemen acknowledges that in some states without labor departments, operators would look after their own facilities in pre-OSHA days.

Page 82 The document also discusses the substitution of fiberglass for asbestos in blankets.

Page 83 Lemen acknowledges that in 1946 there was some concern over whether fiberglass was also the source of health hazards. He agrees that because of the perceived risk at this time, an employer would not necessarily be exercising "ultimate prudence" in making a wholesale substitution for asbestos with fiberglass. Lemen feels that the ultimate solution would be to exercise industrial hygiene controls or to substitute substances that could do the same thing without the health risk.

Page 84 Lemen does not know whether it is possible to manufacture fibrous glass that is not respirable. He does, however, know that there are engineering methodologies to manufacture substitute materials that are not respirable.

Page 85 Although the manufacturing process is not necessarily Dr Lemen's area of expertise, he has studied substitute materials such as fibrous glass, ceramic fibers, wollastonite, albnite, in conjunction with his studies of asbestos. Lemen states that the implementation of OSHA gave manufacturers of fibrous glass a push toward looking into ways of manufacturing their products in ways that would prevent them from having the same health hazards as asbestos. This would be in the '70s. Reference is now made to document 6981.

Page 86 - 87 6981 leads Lemen to believe that Westinghouse was applying hygiene principles within its own facilities. Atty presents a hypothetical: If an employer has been applying industrial hygiene practices for ten years and after ten years there is an incidence of disease, can the employer presume that his work place is still a problem? Or can the employer assume that the disease causing exposure occurred prior to the Industrial Hygiene controls being implemented and that the present condition of the work site is safe.

Lemen retorts that even though industrial hygiene practices, such as Fleisher-Drinker lowered the prevalence of disease, disease could possibly occur. Moreover, diseases such as asbestosis and lung cancer can reflect exposures that occurred prior to the implementation of industrial hygiene controls.

Page 88 Lemen agrees that most of the conclusions that the Fliescher-Drinker study provided were accurate. Lemen also agrees that mesothelioma wasn't recognized when the Fleischer-drinker study came out. After Atty

provides the findings of the study, Lemen agrees that yes those were the findings, but the Dr. also stresses the limitations of the study.

- Page 89-90 Atty now references document 6745, a 1946 process specification. The document is missing but the Dr. recalls that it applied to a general process specification dealing with any of the products that contained asbestos and recommended the use of respirators.
- Page 91 The Dr. describes the "hierarchy" of industrial hygiene controls as: First provide a substitute. Second provide engineering controls. Lastly, provide protective equipment such as respirators. The doctor feels that respirators should be looked at as an interim measuring while effective engineering controls are sought.
- Page 92 - 93 Document 6983 is referenced. It documents the use of Micarta. The Dr.'s knowledge of Micarta is limited to that provided by the document. He states that a skin irritation such as a rash is likely to be caused by a binding agent in the Micarta as opposed to the asbestos itself. Asbestos can cause asbestos warts but the document is referencing rashes and the like which asbestos will not cause.
- Page 94 The next document references the Bickerstaff deposition. Lemen included it in his timeline to reiterate his stance that Westinghouse knew of the hazards of asbestos in the 1940s. Lemen also states that the depo shows him that Westinghouse was aware of the causal connection between asbestos and lung cancer and mesothelioma.
- Page 95 Lemen believes that Bickerstaff was the manager of industrial hygiene for all the Westinghouse facilities and had some 50 hygienists working for him.
- Page 96 Document 7459 is referenced. It is a 1950 news article noting that Westinghouse manufactured its own asbestos containing blankets.
- Page 97 Document 6984, a 1953 Safe Practice Data Sheet printed by Westinghouse, is referenced. Lemen agrees that the ACGIH recommended a maximum allowable concentration of 5 million particles per cubic foot of air. This recommendation was based upon the U.S. Public Health service Dreessen study of 1938.
- Page 98 The statement, "Where asbestos may be mixed with other less harmful dusts, the concentration of asbestos dust will be the controlling factor," taken from document 6984, means that if you have smaller amounts of asbestos, the risk of developing asbestos-related disease would be lower that if you have higher concentration of asbestos.

- Page 99 Atty now references the "Gate transcript." Mr. Gate was in the marine turbine business. Next, The Peter Straus deposition is referenced.
- Page 100 Mr. Strauss was the service engineer for Westinghouse. Dr. Lemen's opinion as to what Mr. Strauss did is an assumption based on everyday experience rather than Westinghouse specific information.
- Page 101 Russell Senkow is an employee of Westinghouse. Dr. Lemen knows nothing more about him. Material Safety Data Cardss [MSDC] are mentioned in the Bickerstaff deposition. Dr. Lemen represents that the MSDC were provided to the Westinghouse material engineers for their use.
- Page 102 The MSDC did not follow on with the product so that other workers would have advantage of the information provided on the cards. The MSDC provided warnings that would give instruction on the manufacture of the products. They were similar to material safety data sheets. The Dr. is not aware of any manufacturer of asbestos-containing material who was in 1953 attaching warnings to his end products.
- Page 103 The Dr. acknowledges that in the pre-OSHA years, the United States Government may have been the largest seller of asbestos containing materials. He does not have any direct evidence of this, though. Lemen is not aware of any pre-OSHA warnings that the United States Government placed on its asbestos-containing products.
- Page 104 Document 7468 is referenced.
- Page 105 Dr. Lemen agrees that the purchaser of a product would have the ultimate say on what it was that he or she got. In other words the end purchaser would be the one specifying the make up of the product.
- Page 106 The ceramic abstracts are included in the timeline because it was obtained from the Westinghouse documents. The contents talk about chrysotile, amosite, and crocidolite under the microscope, but it also states that all three of those types are dangerous and that even tremolite and anthophyllite may cause illness. The document ends by saying, "all asbestos dust should be treated as being injurious to the lungs." The Doctor thinks that it is important to put in the timeline because it is another Example of their knowledge at a particular time of the hazards associated with asbestos exposure.
- Page 107 The Dr. assumes that this particular document was at one point in the possession of Westinghouse because he received it from plaintiff's attorney. References in the timeline to USX Clairton are all for Eisenreich case.

- Page 108 Reference is now made to document 6990, which is a memo to J. Welsons from Z.R. Rees. It talks about corporate standards and data cards covering Micarta, Moldarta, molded composites, et cetera.
- Page 109 This document states that machining can create dust. These labels indicate that whatever they are placed is dusty and measures should be taken to avoid breathing them. The document lists the specification, A-20 and then lists the cards that should be included in the caution. Lemen feels that it is good public health practice that any time an employee is exposed to a substance that is known to be hazardous they should be made aware of their exposure even if the company were meeting the current threshold limit. This would allow workers to protect themselves given a sudden breakdown.
- Page 110 Lemen states that this position was advocated by Dr. Hazlett in 1939.
- Page 111 The position of full disclosure to employees began to be advocated in the '30s should be made aware of what they were working with.
- Page 112 The Dr. testifies that some parts of industry were operating under a paternalistic type of attitude and was reflected in that the medical community was working for the industry.
- Page 113 Lemen cites Castleman's book as having documented several occasions when medical information was known by the medical department within an industry but was not necessarily given to rank and file employees. Document 6993 is referenced, the gist of which is when asbestos cloth is torn by hand, excessive ceiling concentrations of asbestos fiber are found.
- Page 114 The above statement is made in reference to the use of a finished product in the field. For example, when one removes "a section of cloth from a roll of asbestos cloth."
- Page 115 Lemen has no idea whether this document is applicable to the asbestos cloth at issue in this case. Lemen does not know the potential life of the type of blanket referenced in his timeline.
- Page 116 Lemen does not know whether Marinite is present at all in the Lone Star Steel facility. On to document 7418, and the year 1975.
- Page 117 In determining whether a company that had violated OSHA regulations a limited number of times had substandard industrial hygiene / occupational medicine practices, Dr Lemen feels that one must judge a companies hygiene program based on individual violations and how they related to the overall company program.

- Page 118 The frequency of inspections of a particular company may not be an accurate gage of how severe a violation is. This is because OSHA is under staffed and often patterns its inspections toward dangerous industries. OSHA hopes that industries will meet the regulations and apply their own safety programs. On to document 7457.
- Page 119 Document 7457 in re Westinghouse's occupational medicine program as of March 10, 1976. This document shows that Westinghouse was aware that asbestos-containing products could pose health hazards and that they were looking for substitute materials. At this point, Atty observes that Westinghouse was making an attempt to move from level two to level 1 of Lemen's industrial hygiene hierarchy.
- Page 120 Document 7016 is another internal Westinghouse memo showing that Westinghouse was making a continuing effort to find suitable replacements. As of 1976, the industry was still struggling to find adequate substitutes.
- Page 121 Document 7009, January 12, 1976. This document makes reference to the need to measure employee exposure to asbestos.
- Page 122 OSHA violations have degrees of severity. Document 6998 references warning labels and Westinghouse's concerns of employee panic once the labels are used. Also, this document shows Westinghouse's desire to delay the use of warning labels as long as possible.
- Page 123 Lemen acknowledges that document 6998 could be read in different ways without knowing all the facts. It is only a one-page document.
- Page 124 Document 7010 again presents the problem of not knowing the exact meaning of a document without possessing the backup information.
- Page 125 7010 shows Westinghouse reaction to OSHA's standard "dropped down" to two fibers. It shows Westinghouse's concern that they were not going to be able to meet the July 1, 1976 standard.
- Page 126-127 Lemen acknowledges that there is a "balancing of risks" involved with products sometimes. With a flame-retardant product, you have the risk of fire if it is not used and the risk of asbestos hazards if it is used. This is an ethical dilemma.
- Page 128 Lemen feels that employee safety must be a group effort joining government, employers, and the industry itself. Reference is made to the Bates stamp in which the engineering department seeks permission from NES to use a nonasbestos insulating material on these units.

- Page 129 Document 7023 is a 1978 document regarding a few Workers' Compensation claims.
- Page 130 The filing of WC claims doesn't necessarily mean that hygiene practices are not up to par – exposure could have taken place in the past. Document 7023 shows that WC claims had been filed and although the feeling was that Westinghouse was in compliance, they wanted to examine their practices to make sure. Dr Lemen disagrees with the statement, extracted from 7023, "Asbestos was considered relatively safe until the early '70s."
- Page 131 Atty asks Lemen whether asbestos was a toxic material by the 1940 definition of toxic material. Lemen doesn't necessarily answer this question but he does classify it as a toxic substance. In terms of defining things like toxin, Lemen states that he would start with Webster's dictionary and then move on to chemical dictionaries such as Stedman's.
- Page 132 When researching epidemiology, Dr Lemen will refer to Stedman's or Merck Chemical Index, and textbooks such as Casserett, Doull, Hamilton and Hardy, and Proctor and Hughes.
- Page 133 On to the February 13, 1979 document. This document is in response to an order being placed for 35#s of asbestos. Lemen's interpretation of the document is that the writer had the feeling that if Westinghouse continued to buy asbestos, government agencies would be able to track it.
- Page 134 It would not have been illegal in 1979 to purchase 35 pounds of asbestos powder. Lemen can not read any improper behavior by Westinghouse into the letter.
- Page 135-137 Lemen knows nothing about Lone Star Steel other than it is a large steel company and some unions represent different factions of workers. He knows next to nothing about the Lone Star Steel case and has no plaintiff specific information.
- Page 138 Lemen knows that the Texas threshold limit value of 5 million particles was enacted in 1958.
- Page 139 Reference is made to page 12 of Lemen's CV and "Cancer-Related Problems in the Metals Industry" and other papers that Atty would like to see.
- Page 140-145 These pages of the deposition are dedicated to listing the presentations and publications by Dr. Lemen that Atty would like to get his hands on. Lemen has done timelines for USX, USS and Westinghouse. Lemen has done no studies of organizations or industry affiliations within the steel

making industry except, of course, the Chemical Manufacturers Association and how they relate vinyl to chloride.

Page 146-147 USX would be one company that Lone Star Steel could be expected to look to for standards in production. USX could also be looked to for medical standards. Dr. Merrill Bundy was the medical director at USX. United States Steelworker's Union has an internal magazine that may be read throughout the industry.

Page 148 Westinghouse's internal documents would not have been made available to the steel industry but all general medical information would have been available to the steel industry.

Page 149 Lemen does not think that unions would have had access to the information as being disseminated by the Industrial Hygiene Foundation. He does think that the steelworkers union had a strong health and safety program and worked closely with the steel industry in sharing medical information as of the early '70s.

Page 150 Although Dr. Lemen is not aware of whether the merged AFL-CIO is comparable to the Industrial Health Foundation or other industry related organizations in providing health information to unions and workers but he is aware of the fact that they had health and safety department.

Page 151 Reference is made to the Survey of Asbestiform Minerals that Lemen prepared.

Page 152 Each of the substances addressed in the Survey are mineralogically different. The serpentine family has one asbestiform fiber that's of commercial use, that being chrysotile. The amphibole family has six of basically commercial use. Each of these has a different chemical formula. They are shaped differently and behave differently when confronted with moving air currents. They are different chemically and in terms of morphology. Dr. Lemen knows Lewis Crowley. He hired Lemen into Public Health Service.

Page 153 Lewis Crowley lives in Cincinnati. In 1970, Lewis Crowley was doing research into the issue of metal content and its reflection into the carcinogenicity of fibers.

Page 154 In the 1970s Lewis Crowley thought that this was a viable hypothesis. As far as epidemiological studies that can be relied upon in drawing conclusions about the risk of lung cancer in the steelmaking industry, the study performed by Carol Redmond and Bill Lloyd from Pitt well respected.

- Page 155 The Redmond and Lloyd study was entitled Long Term Mortality Study of Steelworkers. It was published in the Journal of Occupational Medicine.
- Page 156 The location of the worker within the steel mill is an important factor to measure risks and to have a valid study. Duration of work would also be an important factor as would opportunity for latency.
- Page 157 Smoking is an important factor to consider when doing a study involving lung cancer.

Examination by Attorney Gustafson

- Page 159 The two-page report concerning Pittsburgh Corning Corporation does not express new opinions. It is a summary of documents that have been provided to counsel before.
- Page 160 Lemen has received no additional documents regarding Pittsburgh Corning for these cases. The report is attached as Exhibit 60.
- Page 161 The Dr. feels that the Industrial Health Foundation [IHF] has been an important organization in the development of knowledge. However, the organization has not always released information on a timely basis. It has been an important source of information from the thirties to the present.
- Page 162 If the IHF had been releasing all the information that they should have, in a timely manner, it may have made a difference in the early prevention of medicine. The IHF has been labeled by some as a creature of industry.
- Page 163 Lemen's opinion on why the IHF failed to release information on a timely basis was that there was a motivation on the part of the IHF to control how the information was presented.
- Page 164 Gustafson questions Lemen about where Castleman got the quote that IHF was the "drabbing slut of industry." Lemen does not know.
- Page 165 Lemen's opinion is that IHF's practice of distributing medical summaries was not harmful.
- Page 166 The Dr. thinks that there were some IHF summaries that were not generally available in medical and scientific literature.
- Page 167 Gustafson presents the question of whether there were summaries on asbestos health hazards that were presented to the IHF but not to the general community.

- Page 168 The process of making steel in the 40s, 50s, 60s, and 70s was a process that created a lot of heat. Heat exhaustion and the effects of heat stress were perceived as one of the most significant industrial health problems of steel millwork. Heat rises, hot air rises, and most steel mills are constructed so as to allow hot air to escape through the roofs that cover the furnaces or the milling and molding devices.
- Page 169 Because asbestos fiber is suspended in the air, some would be expected to escape out of the roof of the mill along with the hot air.
- Page 170 The first text in Lemen's collection to advocate the use of protection from industrial dust came out in the 1930s. Thomas Oliver's 1902 text talked about dust hazards. To Lemen's knowledge, none of the texts in his collection advocate the banning of asbestos-containing products in the steel mill setting.
- Page 171 Dr. Lemen can not put a date on when the government occupational community and industrial hygiene community determined that asbestos-containing products could not be used safely in a setting such as a steel mill.

Examination by Mr. Wittie

- Page 172 Dr. Lemen has produced no timelines regarding Morgan Engineering or any timelines regarding the crane industry in general. The Dr. is unaware of any overhead crane companies being involved in the IHF.
- Page 173 Dose-response relationship means the higher the dosage of toxic material, the higher the risk of developing the disease, the lower the dose, and the lesser the chance. Dosage is a concentration to which an individual is exposed. Both the amounts of asbestos fibers present in the breathing zone as well as the duration of time the person is exposed are important factors in determining the risk.
- Page 174 There are several other factors m, some of which are listed on page 174, that go into determining dosage. The Dr. has formed no opinions with respect to the availability of a substitute for asbestos in braking products.
- Page 175 Papers by Lorimer and Rohl address the dust concentrations coming from brakes during various stages of operation. The papers pertain to brakes in normal operation as well as to persons working with those brakes in repair functions.

Recross-Examination by Mr. Gustafson

Page 177

Lemen asserts that by 1930 industrial consumers should have been aware of the health hazards pertaining to the disease asbestosis, by the mid 50s they should have been aware of the cancer causing ability of asbestos, and by the early 60s they should have been aware of the disease mesothelioma. Lemen stops short of giving an opinion on when they should have stopped purchasing asbestos because the risk may have been lessened by applying the proper engineering controls and hygiene methods. The same time periods apply to when steel mills should have looked into engineering controls and insisted on the use of respirators.

Page 178-180 Closing ceremonies.

MASTER FILE
NO. 1

IN RE: LONE STAR STEEL MILL) IN THE DISTRICT COURT OF
TOXIC TORT LITIGATION) MORRIS COUNTY, TEXAS
APPLICABLE TO: ALL CASES) 76TH JUDICIAL DISTRICT

The deposition of RICHARD A. LEMEN, Ph.D.,
taken on behalf of the Defendants pursuant to Notice
and agreement of Counsel, in accordance with the
Texas Rules of Civil Procedure before Daniel M.
Gershwin, Certified Court Reporter and Notary Public,
at the Gwinnett Place Marriott, 1775 Pleasant Hill
Road, Duluth, Georgia, on the 15th day of July, 1999,
commencing at the hour of 10:12 a.m.

WHEELER REPORTING COMPANY, INC.
1600 Northside Drive, Suite 250
Atlanta, Georgia 30318
(404) 351-4577

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6 1 Exhibits (cont.) Page Line 2 Defendants' Exhibit No. 49 35 20 (Handwritten document) 3 Defendants' Exhibit No. 50 35 25 4 (Document dated January 29, 1988) 5 Defendants' Exhibit No. 51 36 5 (Documents dated 3/1/88 and March 8, 1988) 6 Defendants' Exhibit No. 52 36 10 7 (Document entitled Citation and Notification of Penalty) 8 Defendants' Exhibit No. 53 36 19 9 (Document dated July 25, 1980) 10 Defendants' Exhibit No. 54 36 24 (Letter from George D. Clayton to Paul 11 Tuttle) 12 Defendants' Exhibit No. 55 37 4 (Letter from Wilbur Speicher to Glenn O. 13 Dobbins) 14 Defendants' Exhibit No. 56 37 10 (Letter from R. P. Griffenhagen to M. J. 15 Marchyn dated October 19, 1976) 16 Defendants' Exhibit No. 57 41 12 (Curriculum Vitae of Richard A. Lemen, 17 Ph.D.) 18 Defendants' Exhibit No. 58 42 1 (Letter from Richard A. Lemen to Craig 19 Begal dated June 14, 1999) 20 Defendants' Exhibit No. 59 151 7 (Document entitled Survey of Asbestiform 21 Minerals) 22 Defendants' Exhibit No. 60 160 25 (Document entitled Pittsburgh-Coming 23 Corporation, Report of Richard A. Lemen, Ph.D., 9 June 1999) 24 25 Defendants' Exhibit No. 61 178 10 (Collection of miscellaneous documents)	8 1 APPEARANCES OF COUNSEL: 2 On behalf of the Plaintiffs: 3 NELSON J. ROACH, Esquire 4 Nix, Patterson & Roach 5 205 Linda Drive 6 Daingerfield, Texas 75638 7 8 On behalf of the Defendant CBS Corporation f/k/a 9 Westinghouse Electric Corporation: 10 11 MICHAEL N. WEATHERSBY, Esquire 12 Evert & Weathersby 13 3405 Piedmont Road, N.E. 14 Suite 225 15 Atlanta, Georgia 30305 16 17 On behalf of the Defendant Pittsburgh Coming Corporation: 18 IVAN A. GUSTAFSON, Esquire 19 Blasingame, Burch, Garrard, Bryant & Ashley 20 P. O. Box 832 21 440 College Avenue North 22 Athens, Georgia 30603 23 24 On behalf of the Defendant Morgan Engineering: 25 S. VANCE WITTIE, Esquire Strasburger & Price, L.L.P. Suite 4300 901 Main Street Dallas, Texas 75202 Also Present (via telephone): JACK TIERNEY, Esquire Goldberg, Persky, Jennings & White, P.C. 1030 Fifth Avenue Pittsburgh, Pennsylvania 15219
7 1 Examinations Page Line 2 Cross-Examination 10 16 (By Mr. Weathersby) 3 4 Cross-Examination 158 22 (By Mr. Gustafson) 5 Cross-Examination 171 14 (By Mr. Wittie) 6 7 Recross-Examination. 176 5 (By Mr. Gustafson) 8 Recross-Examination. 178 16 (By Mr. Weathersby) 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25	9 1 THE COURT REPORTER: Pursuant to the 2 disclosure law, I was retained for this 3 deposition by the Defendants. I have no 4 contracts with anyone, and you all are being 5 charged our usual and customary rates for this 6 deposition. 7 - - - 8 RICHARD A. LEMEN, Ph.D., 9 having been first duly sworn, was deposed and testified as 10 follows: 11 MR. WEATHERSBY: This will be the 12 deposition of Dr. Richard A. Lemen. 13 And I understand this deposition is being 14 taken in conjunction with a case pending in is 15 it Morris County, Texas? 16 MR. ROACH: (Nods head affirmatively.) 17 MR. WEATHERSBY: And will be taken 18 pursuant to the Texas Rules of Civil Procedure. 19 I don't know if you have local 20 stipulations. I know you have Texas rules 21 governing how objections are to be made. And I 22 would propose that other than those objections 23 you're required to make, which would be form 24 and responsiveness, that objections going to 25 the substance are reserved until the deposition

10 1 is used in any trial or for hearing or whatever 2 purpose in the case. 3 MR. ROACH: (Nods head affirmatively.) 4 MR. WEATHERSBY: And at the conclusion of 5 the deposition, Dr. Lemen, we'll be asking if 6 you want to read and sign the deposition. I 7 don't remember what your preference is on that. 8 DR. LEMEN: Usually not but we'll see. 9 MR. WEATHERSBY: Well, let's put it this 10 way. If we don't get some contrary direction, 11 we'll go with your usual rule on that. 12 DR. LEMEN: Is that all right? 13 MR. ROACH: That's fine. 14 THE COURT REPORTER: I'll e-mail you a 15 copy of the deposition anyway, Doctor. 16 CROSS-EXAMINATION 17 BY MR. WEATHERSBY: 18 Q Doctor, I'm here representing CBS, Inc. And 19 the interests they have in this relates to Westinghouse. 20 And I understand that you have issued a report entitled 21 Asbestos Timetables & Their Relevance to Westinghouse; is 22 that correct? 23 A That's correct. 24 Q Do you have a current copy of that timetable -- 25 A Yes, I do.	12 1 you incorporated relating to Westinghouse? 2 A The documents incorporated in the timeline I 3 obtained from an attorney by the name of Janice Savinis 4 from the Goldberg, Persky, Jennings & White law firm. 5 Q And was that relating to a case different from 6 the case that we're here today to discuss? 7 A Yes, it is. 8 Q What case was that; do you recall? 9 A It's the Eisenreich case. 10 Q And where is that pending? 11 A I think it's in -- you may have to help me on 12 the phone, but it's in Allegheny County; is that correct? 13 Q Just your best recollection is fine, Doctor. 14 And have you been deposed with reference to the 15 Eisenreich case? 16 A The case has been moved forward, and so I don't 17 think there has been any -- I don't recall having been 18 deposed yet. 19 Q Did you issue a report relating to the Asbestos 20 Timetable and their relevance to Westinghouse in the 21 Eisenreich case? 22 A Yes. 23 Q Is it different from the report that you have 24 in front of you today? 25 A It's the same report.
11 1 Q -- in your hands? 2 A It should be the same copy that you have. 3 Q All right. I'm going to use my marked-up copy 4 here to ask questions, and then we can probably ultimately 5 mark and attach your copy to the deposition since you 6 don't have my notes on yours. 7 First of all, what is this summary or 8 timetable? How would you describe this collection of 9 documents? 10 A Well, first of all, I think you have seen in 11 the past my Asbestos Timetable. I received a set of 12 Westinghouse documents in a case that I'm working on 13 besides this case, and I have incorporated those documents 14 as best I could into the existing timetable so that you 15 could see the dates as they relate to the state of the art 16 knowledge that is presented in the timetable. 17 There is also in this timetable some documents 18 pertaining to the Industrial Hygiene Foundation which are 19 also new from the timetable I think that you have seen in 20 the past. 21 Q What we'll do is we'll go through the 22 timetable. As we come -- particularly as we come to these 23 new additions, I'll have some questions for you. 24 But before we get into that, where did you 25 obtain the Westinghouse documents or the documents that	13 1 Q Identical report? 2 A Yes. 3 Q And when did you complete the preparation of -- 4 I'll tell you what. Let's go ahead and mark the thing so 5 I don't have to keep reading the whole title. We'll mark 6 this as Defendants' Exhibit No. 1, and I'll put the 7 exhibit sticker on the front page. So let's start calling 8 it Exhibit 1 now to avoid having to use up so much space 9 reading the title. 10 (Defendants' Exhibit No. 1 marked for 11 identification.) 12 Q (By Mr. Weathersby) Exhibit 1, when did you 13 complete that project? 14 A The date on the timeline is 4-23-99, so it 15 would be April 23rd, '99. And I sent it in shortly 16 thereafter. 17 Q And when did you first obtain the 18 Westinghouse-related documents from Goldberg Persky? 19 A I don't know the exact date, but it was either 20 late in 1998 or early in 1999. 21 Q And did you receive any instruction from 22 Goldberg Persky or any other plaintiffs' lawyer relating 23 to the preparation of the Westinghouse portion? 24 A I was asked -- 25 MR. TIERNEY: Just a second, Doctor.

14 1 At this time, we would interpose an 2 objection that that would be covered, at least 3 in Pennsylvania, by the work product exception 4 and the -- giving confidentiality to 5 communications between expert and counsel. 6 Q (By Mr. Weathersby) You can answer under the 7 Texas rules. 8 MR. TIERNEY: Well, we would oppose him 9 answering unless you can get a determination 10 that you can inquire into work product 11 conversations in another lawsuit. It's highly 12 irrelevant to your case. I mean -- 13 MR. WEATHERSBY: I think that the burden 14 is probably on the person raising the objection 15 to get a protective order, and I'm going to ask 16 for him to answer the question. 17 MR. TIERNEY: Well, yeah. But I'm in a 18 position where I can't get a protective order 19 if you suddenly pop the question out. I mean, 20 let's use common sense. Your inquiry into what 21 transpired between Dr. Lemen and someone in 22 this firm is completely irrelevant to your 23 case. I don't know that you could inquire of 24 Dr. Lemen's conversations with Nelson Roach, 25 but you certainly can't inquire into	16 1 there's a determination made by the trial judge 2 as to whether this is an improper instruction 3 that you're giving to Dr. Lemen. We've got 4 other lawyers here, and I don't know if they're 5 willing to enter into a similar reservation of 6 rights. 7 Certainly your objection is not well 8 founded in the state of Georgia where this 9 deposition is physically taking place, and from 10 my best recollection of what work I've done in 11 Texas it's not well founded there either. 12 Does anybody else want to add anything to 13 that? 14 MR. ROACH: Well, it would not be a valid 15 objection in Texas. 16 MR. WEATHERSBY: That was Mr. Roach. 17 MR. TIERNEY: Well, I don't think that 18 it's our position that communications between 19 our firm and Dr. Lemen have anything to do with 20 your lawsuit. 21 MR. WEATHERSBY: Your position has been 22 made very clear. 23 Okay. We'll take that up with the judge 24 in Texas and see if we get another shot at it. 25 Q (By Mr. Weathersby) Doctor, were you given
15 1 conversations between our firm -- 2 MR. WEATHERSBY: I understand your 3 position, and I'm insisting on an answer. You 4 know, I don't know that you even have standing 5 to make an objection here. 6 It's certainly relevant because it may 7 well have a bearing on the conclusions that 8 Dr. Lemen ultimately reached. 9 MR. TIERNEY: Well, I don't think it does. 10 And I'm instructing Dr. Lemen -- you know, you 11 can choose to follow my instruction or not 12 because I'm not your counsel for this 13 deposition, but I'm instructing you, Dr. Lemen, 14 based on our working relationship vis-a-vis our 15 firm and you as an expert testifying in the 16 Eisenreich case, I'm instructing you not to 17 answer questions about communications between 18 our firm and yourself referring to a report. 19 MR. WEATHERSBY: Okay. You're putting 20 Dr. Lemen in a very difficult position here 21 because you're giving him instructions contrary 22 to the law in the jurisdiction where he's 23 testifying. 24 I think what I'm willing to do at this 25 point is I will reserve these questions until	17 1 documents at the time you received these Westinghouse 2 documents referenced in Exhibit 1 that are not referenced 3 in the timetable? 4 A I have some documents here, some of which I've 5 obtained from Mr. Roach's firm, and documents that I've 6 obtained from Goldberg Persky relevant to the Industrial 7 Hygiene Foundation. But they are abstracts of what was 8 sent out, and they are not individually because there's 9 several thousand of those documents referenced in the 10 timeline. 11 (Whereupon, there was an interruption in the 12 proceedings.) 13 (Discussion held off the record.) 14 Q (By Mr. Weathersby) Okay, Dr. Lemen. You've 15 got a stack of documents in front of you there that appear 16 to be about, what, 10 inches tall. And I think what we 17 probably should do is as we go down the stack explain to 18 me what they are. 19 And before we do that -- now, yesterday I 20 received from your office a collection of documents that 21 you had copied for me. The first page on the cover is it 22 looks like the cover to a brochure entitled Westinghouse 23 Flexible Insulating Materials? 24 A The documents that I copied and sent to you are 25 the documents that are referenced in my timeline as

18 1 pertaining specifically to Westinghouse. 2 Q All right. So what we have in the collection 3 that I got were the documents that I would find that have 4 been added to the timeline that is now Exhibit 1; correct? 5 A That's correct. And they should be in the same 6 chronological order as they appear in the timeline. 7 Q All right. That's fine. 8 Now, what do you have in your stack separate 9 and apart from the documents that you provided to me? 10 A I have three documents that represent abstracts 11 of asbestos articles that were abstracted by the 12 Industrial Health Foundation. 13 Q Would you pass that one over, please. 14 A One is 151 abstracts, another one with the same 15 number, and another one with 1170. 16 Q And I think just for completeness we probably 17 are going to need to mark those as well. Let's mark them. 18 And if you would, at the conclusion of the deposition 19 we'll make arrangements for how to get the copying and so 20 forth like we've done in the past. 21 The first is the Asbestos: 753 = 151 Abstracts 22 on the title. And I'm going to affix the label 23 Defendants' Exhibit No. 2 to the upper right-hand corner 24 of that document. 25 (Defendants' Exhibit No. 2 marked for	20 1 Foundation. But there's no correspondence or 2 attorney-privileged letters or anything of that 3 nature. 4 MR. WEATHERSBY: Okay. Who's the 5 gentleman on the phone? 6 MR. TIERNEY: Mr. Jack Tierney. 7 Q (By Mr. Weathersby) Dr. Lemen, does 8 Mr. Tierney represent you? 9 A Well, in the Eisenreich case. 10 Q He represents you in that case? 11 A Well, the attorney I've been working with is 12 Janice Savinis, and he works with her. 13 MR. WEATHERSBY: And Mr. Tierney, who is 14 it that you represent with reference to the 15 Lone Star Steel case? 16 MR. TIERNEY: I don't represent anyone in 17 the Lone Star Steel case. 18 MR. WEATHERSBY: Okay. I would appreciate 19 if you would not interrupt the deposition. 20 You're being permitted to listen in as a 21 courtesy. But we're trying to get on with the 22 deposition. 23 And if we continue to be interrupted, 24 we're going to have to get on the phone to the 25 judge because so far we've gotten nowhere
19 1 identification.) 2 Q (By Mr. Weathersby) Do you see where I've 3 attached that? 4 A Yes. 5 Q And that's Exhibit 2. 6 MR. TIERNEY: Can I just ask if the doctor 7 could explain again what Exhibit 2 is. 8 THE WITNESS: Exhibit 2 are the abstracts 9 that are in folders that I received from your 10 office that deal with the Industrial Health 11 Foundation. And they are simply usually two 12 abstracts a page of articles dating back to the 13 beginning of the Industrial Health Foundation 14 that pertain to asbestos that were available to 15 member companies of the Industrial Health 16 Foundation. 17 MR. TIERNEY: And you're not turning over 18 anything to the counsel for the defendant 19 Westinghouse, now known as CBS, that involves 20 correspondence or transmittal letters or 21 anything like that? 22 THE WITNESS: There are no transmittal 23 letters and correspondence in your case. I'm 24 only turning over documents that are relevant 25 to Westinghouse or are the Industrial Health	21 1 largely because of discussions that you have 2 initiated. And so I don't mind you listening 3 in. I don't really consider you a participant 4 in this deposition. 5 MR. TIERNEY: Well, as long as I have from 6 you a representation that among the documents 7 that are going to be discussed or talked about 8 that any attempt to put on the record by 9 exhibit or otherwise any communications between 10 our firm and Dr. Lemen in the Eisenreich 11 case -- 12 MR. WEATHERSBY: I can assure you that I 13 will not make that representation. And if 14 you'd had an interest in looking at the 15 documents, you need to be here. And that's all 16 I can say. We're going forward at this point. 17 MR. TIERNEY: Okay. Well, then I will -- 18 I don't want to stop you from going forward, 19 but I will instruct the doctor now, pending a 20 determination by your judge, not to get into 21 any communications with our firm or turn over 22 any documents which are personal correspondence 23 between our firm and him. 24 THE WITNESS: This is Dick Lemen. I can 25 assure you that there are no pieces of paper

22 1 that meet that -- there's no personal 2 correspondence. This is all -- nothing that 3 would identify Goldberg or any personal 4 correspondence, I guess. 5 MR. TIERNEY: Okay. Thanks, Doctor. 6 Q (By Mr. Weathersby) All right. The next 7 document that I'm going to mark is the larger stack listed 8 1170 Abstracts. And I'm going to mark that Defendants' 9 Exhibit No. 3. 10 (Defendants' Exhibit No. 3 marked for 11 identification.) 12 Q (By Mr. Weathersby) And you see where I have 13 thus marked it? 14 A Yes. 15 Q Now, as I understand, the document with the 16 binder cover that I'm handing to you now, that's the same 17 as Defendants' No. 2; correct? 18 A Let me see. I need to check that. 19 Q (Indicating.) 20 A Yeah. I stuck that in wrong. I'm sorry. 21 Q That's okay. You can actually if you need to 22 make reference to that along the way as long as they're 23 the same. 24 Okay. So in addition to the documents that you 25 provided to me yesterday, which are incorporated in the	24 1 document on asbestos. 2 Q Okay. No. 6 will be the Buffalo Large Motor 3 Division. 4 (Defendants' Exhibit No. 6 marked for 5 identification.) 6 A The Kansas City Works. 7 Q (By Mr. Weathersby) That will be No. 7, the 8 Kansas City Works. 9 (Defendants' Exhibit No. 7 marked for 10 identification.) 11 A Discussion of OSHA by the Westinghouse. 12 Q (By Mr. Weathersby) Okay. And that will be 13 marked No. 8. 14 (Defendants' Exhibit No. 8 marked for 15 identification.) 16 A This is a warning label. 17 Q (By Mr. Weathersby) Which will be marked 18 No. 9. That's a March 6, 1970, document. 19 (Defendants' Exhibit No. 9 marked for 20 identification.) 21 A Another document that talks about government 22 law and asbestos exposure. 23 Q (By Mr. Weathersby) Okay. That will be 24 No. 10. 25 (Defendants' Exhibit No. 10 marked for
23 1 timeline, you were provided Defendants' Exhibit 2 and 2 Defendants' Exhibit 3? 3 A Right. 4 Q Was there anything else that you were provided? 5 A I have IHF membership lists to -- let's see. 6 What's the first date on that one? 7 Q 1981. 8 A Yeah. So I have two copies of that. 9 Q And I'll mark the IHF Membership List as 10 Defendants' Exhibit 4. 11 (Defendants' Exhibit No. 4 marked for 12 identification.) 13 A Right. And that goes back from '81 to '37. 14 Q (By Mr. Weathersby) All right. Anything else? 15 A Well, I have other documents that I can I guess 16 just go through them. 17 Q Yeah. Let's do. We might as well. 18 A This is a document on corporate industrial 19 hygiene, Westinghouse, and it's a document that doesn't 20 appear in my timeline. 21 Q Okay. And we will mark that as No. 5. 22 (Defendants' Exhibit No. 5 marked for 23 identification.) 24 Q (By Mr. Weathersby) All right. 25 A The next is the Buffalo Large Motor Division	25 1 identification.) 2 A This is another document dealing with Transite 3 pipe products. 4 Q (By Mr. Weathersby) And we'll mark that 11. 5 (Defendants' Exhibit No. 11 marked for 6 identification.) 7 A This is an observation of the milling operation 8 and the asbestos cement. 9 Q (By Mr. Weathersby) Which will be No. 12. 10 (Defendants' Exhibit No. 12 marked for 11 identification.) 12 A This is -- now, you understand these are not in 13 my timeline. 14 Q (By Mr. Weathersby) I do. 15 A And this is one on accident prevention, 16 Bloomingham [sic] Works. 17 Q (By Mr. Weathersby) This will be No. 13. 18 A Isn't it Bloomingham [sic] Works? 19 Q Bloomfield Works. 20 (Defendants' Exhibit No. 13 marked for 21 identification.) 22 A Okay. Another one talking about Westinghouse 23 Building 2325 and asbestos use in insulation materials. 24 Q (By Mr. Weathersby) That will be No. 14. 25 (Defendants' Exhibit No. 14 marked for

26 1 identification.) 2 A Another one dealing with East Pittsburgh 3 accident prevention concerning asbestos fiber 4 concentrations reported in 1973. 5 Q (By Mr. Weathersby) Okay. That will be 6 No. 15. 7 (Defendants' Exhibit No. 15 marked for 8 identification.) 9 A Another document on Westinghouse Building 2016 10 in 1981. 11 Q (By Mr. Weathersby) That will be No. 16. 12 (Defendants' Exhibit No. 16 marked for 13 identification.) 14 A Another document in 1980 confirming a meeting 15 that was scheduled to talk about employee exposure to 16 asbestos at the Lester plant. 17 Q (By Mr. Weathersby) All right. That's No. 17. 18 A Here. This (indicating) actually goes with it. 19 I don't know how to -- I think all of these are actually 20 attachment to that. 21 Q All right. That's a multi-page exhibit. 22 MR. WEATHERSBY: Do we have a stapler here 23 by any chance? 24 (Discussion held off the record.) 25 (Defendants' Exhibit No. 17 marked for	28 1 about power and the spectacular story of energy in the 2 USA. 3 Q (By Mr. Weathersby) That will be No. 21. 4 (Defendants' Exhibit No. 21 marked for 5 identification.) 6 (Discussion held off the record.) 7 A I think this is all together, so I'm just going 8 to just leave this clip on it. 9 Q Okay. 10 A This is on accident prevention which is talking 11 about asbestos fiber concentrations. 12 Q And we'll mark that multi-page exhibit No. 22. 13 (Defendants' Exhibit No. 22 marked for 14 identification.) 15 A If you can hold one second. 16 Q (By Mr. Weathersby) Not a problem. 17 (Discussion held off the record.) 18 A This is a document on Westinghouse's response 19 to all -- to interrogatories. 20 Q (By Mr. Weathersby) Okay. That will be 21 No. 23. 22 (Defendants' Exhibit No. 23 marked for 23 identification.) 24 A This is a Westinghouse -- it's a second 25 supplemental to the first one I just gave you.
27 1 identification.) 2 Q (By Mr. Weathersby) All right. That was 3 No. 17, Doctor. 4 A Next is a 1984 letter from Buffalo talking 5 about a recent shop safety tour revealing the continued 6 use of asbestos material. 7 Q That's No. 18. 8 (Defendants' Exhibit No. 18 marked for 9 identification.) 10 A Another letter, 1976, talking about standards 11 enacted in July of 1976 by OSHA and -- I'm sorry. These 12 three. 13 Q (By Mr. Weathersby) And that would be No. 19. 14 And that's a multi-page exhibit also that we're going to 15 clip. Okay. 16 (Defendants' Exhibit No. 19 marked for 17 identification.) 18 A Next is a letter to Mr. Wayne Brooks, 19 Organization Research Counselors, Incorporated, from 20 Robert Ingham, senior attorney for Westinghouse Electric, 21 two pages that needs to be clipped. 22 Q (By Mr. Weathersby) Which will be No. 20. 23 (Defendants' Exhibit No. 20 marked for 24 identification.) 25 A Another multiple-page document which is talking	29 1 Q (By Mr. Weathersby) And that's No. 24. 2 (Defendants' Exhibit No. 24 marked for 3 identification.) 4 Q (By Mr. Weathersby) And hopefully we're 5 getting to the bottom of the stack here. We're running 6 out of clips. 7 A We are. We're just trying to put them 8 together. 9 Q Not a problem. 10 A I should have stapled these ahead of time. 11 Q Not a problem. 12 A This is another document dealing with final 13 copy of OSHA requirements, and it's multiple pages again. 14 Q And that will be No. 26. 15 (Defendants' Exhibit No. 26 marked for 16 identification.) 17 (Discussion held off the record.) 18 A Next is a summary of Westinghouse compliance 19 with Westinghouse EPA TSCA dated November 1992. 20 Q (By Mr. Weathersby) And that will be No. 25. 21 I skipped 25. We're coming back to it. 22 (Defendants' Exhibit No. 25 marked for 23 identification.) 24 Q (By Mr. Weathersby) Okay. Next? 25 A This is an inquiry about an internal memo from

30 1 Westinghouse Building 1558, reply to inquiry about 2 asbestos in Westinghouse products and facilities, and it's 3 dated November 1984. 4 Q And that will be 27. 5 (Defendants' Exhibit No. 27 marked for 6 identification.) 7 A This is a table of different product grades 8 from Westinghouse. 9 Q (By Mr. Weathersby) And that will be No. 28. 10 (Defendants' Exhibit No. 28 marked for 11 identification.) 12 A The next is a document pertaining to Keene 13 Insulation Contracting Division, a report to Westinghouse, 14 1971. 15 Q (By Mr. Weathersby) That will be No. 29. 16 (Defendants' Exhibit No. 29 marked for 17 identification.) 18 A Next is a Process Specification sheet on 19 thermal insulation dated 1946. 20 Q (By Mr. Weathersby) No. 30. 21 (Defendants' Exhibit No. 30 marked for 22 identification.) 23 A The next document pertains to application of 24 block and plastic insulation instructions. 25 Q (By Mr. Weathersby) No. 31.	32 1 Q (By Mr. Weathersby) That will be 35. 2 (Defendants' Exhibit No. 35 marked for 3 identification.) 4 A The next is a materials evaluation pertaining 5 to Johns-Manville Thermobestos fiber release, the date on 6 the cover. 7 Q (By Mr. Weathersby) No. 36. 8 (Defendants' Exhibit No. 36 marked for 9 identification.) 10 A And I think this one got copied twice. We'll 11 check. I'm going to set it to the side, but I think I've 12 already given it to you. We can check, and if I haven't, 13 we will. 14 Q (By Mr. Weathersby) All right. 15 A Next is internal correspondence in 16 Johns-Manville talking about amosite exposure from 17 Marinite. 18 Q That will be No. 37. 19 (Defendants' Exhibit No. 37 marked for 20 identification.) 21 A The next is also Johns-Manville talking about 22 Marinite. 23 Q (By Mr. Weathersby) No. 38. 24 (Defendants' Exhibit No. 38 marked for 25 identification.)
31 1 (Defendants' Exhibit No. 31 marked for 2 identification.) 3 A Next is a Process Specification, Application of 4 Sheet Insulation instruction sheet. 5 Q (By Mr. Weathersby) That will be 32. 6 (Defendants' Exhibit No. 32 marked for 7 identification.) 8 (Discussion held off the record.) 9 A Next is a document talking about asbestos cloth 10 being cut and sawed and air samples, 1954. 11 Q (By Mr. Weathersby) That will be No. 33. 12 A What's the date on that? 13 Q June 11, 1954. 14 A This goes with that. I'm sorry. 15 Q It has an attachment. 16 (Defendants' Exhibit No. 33 marked for 17 identification.) 18 A This is a report on the Evaluation of Asbestos 19 Exposures at the North Loop Turbine Number 1 Facility, and 20 it goes through '79. 21 Q (By Mr. Weathersby) That's Exhibit 34. 22 (Defendants' Exhibit No. 34 marked for 23 identification.) 24 A The next is a follow-up letter talking about 25 asbestos cement products and usage.	33 1 A This is talking about Marinite and dust 2 control. 3 Q (By Mr. Weathersby) No. 39. 4 (Defendants' Exhibit No. 39 marked for 5 identification.) 6 A Another document from Manville talking about 7 the sawing of Marinite. 8 Q (By Mr. Weathersby) That will be 40. 9 (Defendants' Exhibit No. 40 marked for 10 identification.) 11 A We're almost done. 12 Q (By Mr. Weathersby) Okay. 13 A This is a document pertaining to JM refractory 14 products and talking about how hand-powered tools are used 15 extensively in the field to work Marinite sheets. 16 Q That will be 41. 17 (Defendants' Exhibit No. 41 marked for 18 identification.) 19 A This is another document pertaining to a review 20 of documents at industrial hygiene, and it talks about the 21 industrial hygiene files and how they're kept. 22 Q (By Mr. Weathersby) That will be No. 42. 23 (Defendants' Exhibit No. 42 marked for 24 identification.) 25 A This is another document pertaining to a review

34 1 of and inventory of the files which are present in the 2 industrial hygiene department. 3 Q (By Mr. Weathersby) That will be No. 43. 4 (Defendants' Exhibit No. 43 marked for 5 identification.) 6 A This is a Westinghouse document talking about 7 Marinite. 8 Q (By Mr. Weathersby) That will be No. 44. 9 (Defendants' Exhibit No. 44 marked for 10 identification.) 11 A This is a document which is a brief summary of 12 an hour and 45-minute telephone conference meeting with 13 headquarters concerning asbestos. 14 Q (By Mr. Weathersby) No. 45. 15 (Defendants' Exhibit No. 45 marked for 16 identification.) 17 A This is a document dealing with the objectives 18 of the -- industrial hygiene objectives for the company. 19 Q (By Mr. Weathersby) That will be No. 46. 20 (Defendants' Exhibit No. 46 marked for 21 identification.) 22 A Another document pertaining to the industrial 23 hygiene files. 24 Q (By Mr. Weathersby) No. 47. 25 (Defendants' Exhibit No. 47 marked for	36 1 identification.) 2 A Another document talking about retention of 3 files. 4 Q (By Mr. Weathersby) We'll mark that 51. 5 (Defendants' Exhibit No. 51 marked for 6 identification.) 7 A This is a citation and notification of penalty, 8 1992. 9 Q (By Mr. Weathersby) We'll mark that 52. 10 (Defendants' Exhibit No. 52 marked for 11 identification.) 12 (Discussion held off the record.) 13 A This is another larger document to the 14 personnel relations managers talking about the OSHA 15 standard and their compliance with. 16 Q (By Mr. Weathersby) No. 53. 17 MR. WEATHERSBY: Is that right, Danny? 18 THE COURT REPORTER: Yes. 19 (Defendants' Exhibit No. 53 marked for 20 identification.) 21 A The next is an evaluation for Westinghouse of 22 industrial hygiene by George D. Clayton & Associates. 23 Q (By Mr. Weathersby) Which will be No. 54. 24 (Defendants' Exhibit No. 54 marked for 25 identification.)
35 1 identification.) 2 A This is a document talking about retention 3 guidelines of industrial hygiene files. 4 Q (By Mr. Weathersby) That will be No. 48. 5 (Defendants' Exhibit No. 48 marked for 6 identification.) 7 A And I don't know that this is really of any 8 relevance, but it is something that was in my files 9 so -- (pause). It's really not of relevance to me. 10 Q (By Mr. Weathersby) It was not anything that 11 you considered in forming your opinions? 12 A No. Because I can't read it. 13 Q We'll set that aside for right now. 14 MR. ROACH: This (indicating) all goes 15 together? 16 THE WITNESS: Yeah. 17 A And this is another document pertaining to the 18 files in the industrial hygiene department. 19 Q (By Mr. Weathersby) We'll mark that 49. 20 (Defendants' Exhibit No. 49 marked for 21 identification.) 22 A Again, another document pertaining to 23 industrial hygiene files. 24 Q (By Mr. Weathersby) We'll mark that 50. 25 (Defendants' Exhibit No. 50 marked for	37 1 A The next is a document dealing with liability 2 and contractors at the Kansas City Works. 3 Q (By Mr. Weathersby) No. 55. 4 (Defendants' Exhibit No. 55 marked for 5 identification.) 6 A And finally the last in this stack is an 7 internal memorandum from the Buffalo Large Motor Division 8 concerning application worksheets and asbestos exposure. 9 Q (By Mr. Weathersby) That will be No. 56. 10 (Defendants' Exhibit No. 56 marked for 11 identification.) 12 A And the one document that I held aside was one 13 of the earlier ones I gave you. We can check later. 14 Q (By Mr. Weathersby) Okay. That's fine. 15 A We can put it in this file right here 16 (indicating). 17 Q We'll put it in the -- 18 A But I think it's a duplicate -- 19 Q -- yet-to-be-determined file. 20 A -- of what I've given you already. 21 Q Now, let's back up, if we can, and see if we 22 know where we are or if I know where we are. 23 We have marked documents 4 through 56. And 24 those are the ones we've been going through the process in 25 the last few minutes. And these are documents that were

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1 provided to you but are not reflected in your timetable.

2 **A Yes. Many of those documents were provided by**
3 **Mr. Roach's firm to me in this case.**

4 **Q** Is there anything that you can tell me about 4
5 through 56 as to why these are not reflected in your
6 timetable? And I ask it that way just to see the extent
7 to which we need to deal with them.

8 **A Well, they're relevant to a certain extent, but**
9 **they're not incorporated into my timetable because I**
10 **didn't change my timetable from the previous documents**
11 **that I had. So these are documents that are in addition**
12 **to documents that are in here that I was given to read but**
13 **I didn't feel the necessity to put them in my timetable.**

14 **Q** And as I understand -- and don't let me
15 mischaracterize what you're saying, but let me see if I
16 can bounce back to you what I think you're saying.

17 These are documents, some of which you consider
18 to be relevant to your consideration but none of which you
19 felt would have changed the timetable sequencing or that
20 would have made an alteration to your report that is
21 called the timetable?

22 **A That is correct.**

23 **Q** In other words, is it correct to say that you
24 wouldn't view any of these as benchmark occurrences that
25 would alter the timetable conclusions?

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1 **A Well, I would say that they are background**
2 **information that I was given to prepare for this case, and**
3 **they may have relevance in future use, but I have not seen**
4 **the necessity of adding them to my timetable.**

5 **Q** Do you anticipate relying on these documents
6 for any of the conclusions that you were reaching
7 concerning Westinghouse as a company?

8 **A Well, they add to the information that's**
9 **contained in the timetables, so I guess the answer to that**
10 **would be yes.**

11 **Q** Okay.

12 **A And in response to your notice, I'm giving you**
13 **all the information that I have except any personal**
14 **lawyer-client -- you know, my correspondence between the**
15 **other law firm.**

16 **Q** And just so we have a record, now, describe for
17 me the category of things that are exchanges between you
18 and law firms that are not included in the production?

19 **A Well, I've given you everything -- I will in a**
20 **moment give you information that's correspondence between**
21 **myself or that I've obtained from Mr. Roach's firm. I**
22 **have not given you personal information dealing with the**
23 **Eisenreich case because it's not applicable to this.**

24 **Q** That's plaintiff-specific information?

25 **A That's plaintiff-specific information that I**

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1 **have, and I don't think it's applicable at all to this**

2 **case, other than the documents that I'm sharing with you**
3 **in this notebook and what I've just given you. And I do**
4 **have some other documents here in response to your notice.**

5 **Q** Okay. Why don't we go ahead and as long as
6 we're going through the process identify any remaining
7 documents that you consider --

8 **A I don't think we've marked the notebook; have**
9 **we?**

10 **Q** We have not marked the notebook. And as I
11 understand, the notebook and the collection that you sent
12 me yesterday are the same?

13 **A That's correct.**

14 **Q** The same documents?

15 **A I don't know if you want to mark it, but those**
16 **documents represent each of the entries in the timetable.**

17 **Q** Pertaining to Westinghouse?

18 **A Pertaining to Westinghouse in chronological**
19 **sequence.**

20 **Q** And that same thing is in the notebook?

21 **A My notebook is identical to what you have in**
22 **front of you.**

23 **Q** Okay. We're on the same page with that then.

24 Let me wait to decide how we'll go about
25 marking that. I don't know if we'll mark them

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1 individually, as a whole, or not at all.

2 **A I -- we haven't -- I guess this is Exhibit 1**
3 **that we've entered, the timelines.**

4 **Q** That is the timetable.

5 **A I brought my curriculum vitae.**

6 **Q** We might as well mark that as well. This is a
7 current CV?

8 **A Yes. It was printed off this morning. That's**
9 **why it's not stapled.**

10 **Q** Even though it's going to get lost in the mix,
11 we'll mark it 57.

12 (Defendants' Exhibit No. 57 marked for
13 identification.)

14 **Q** (By Mr. Weathersby) And I'm going to hand that
15 back to you, 57, so that we can discuss it further.

16 All right. What else do we have?

17 **A And the last thing that I brought was in**
18 **response to your question correspondence between myself**
19 **and Mr. Roach's law firm and billing in this case to this**
20 **point in time.**

21 **Q** Okay. And we'll mark that 58.

22 **A There are two separate letters. One is for**
23 **copying and one is for professional time.**

24 **Q** I'm going to put those together, attach them,
25 and mark the correspondence as 58.

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1 (Defendants' Exhibit No. 58 marked for
2 identification.)
3 Q (By Mr. Weathersby) Okay. Has that got us
4 through the documents now?
5 A Well, I do have with me -- and I don't know if
6 I'm going to respond to it. You maybe want to wait until
7 we see if we need to respond to it; but it's my normal,
8 which you have a copy of, briefing book pertaining to the
9 state of the art issues concerning asbestos.
10 Q Okay.
11 A And I brought it, plus a couple of other
12 documents, but I don't know if they're going to be
13 relevant in this deposition. But you're certainly welcome
14 to see them.
15 Q What we're going to do is when we take a break
16 I'll look at that.
17 Let me ask you this. And it's going to be
18 difficult for me to remember exactly when it was that I
19 last got a collection of your documents.
20 A It was two weeks ago on Monday in the case that
21 Mr. Parnell was doing.
22 Q Was a copy made then?
23 A And I sent it to you. There were --
24 Q You're right.
25 A There were several lawyers, and you all

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1 requested -- I sent you one set of all the documents which
2 dealt with my briefing book and another document dealing
3 with a notebook on household exposure.
4 Q You're right on that.
5 And has there been anything added since that
6 deposition a couple of weeks ago?
7 A To my briefing book?
8 Q Yes.
9 A I just added one page, which I don't think it's
10 going to be of any relevance to you, but it's just this
11 first page (indicating) which deals with the different
12 forms of asbestos and their chemical formula.
13 Q Actually that's something I would be interested
14 in, and I don't know if we can -- it would be great if we
15 could make a copy of it.
16 A Otherwise it's the same.
17 Q Let's, if we can, take it out and we'll talk
18 about it, and then maybe while we're here we can get a
19 copy at the hotel.
20 A (Complying.)
21 Q Great.
22 A I think we've gone through everything.
23 Q Great.
24 MR. TIERNEY: Excuse me. Can I just get
25 what No. 57 was, Mr. Roach?

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1 MR. ROACH: No. I don't have it in front
2 of me.
3 MR. WEATHERSBY: 57 was the CV.
4 THE WITNESS: Yes. Right here.
5 Q (By Mr. Weathersby) Okay. Let's proceed this
6 way. Let's begin with the timeline, which is Exhibit
7 No. 1.
8 A Correct.
9 Q The documents that you have provided us today
10 that have been marked here at the deposition, plus the
11 collection that's in your notebook and referenced in the
12 timeline, Exhibit 1, are these the complete collection of
13 documents that you considered specifically as to
14 Westinghouse?
15 A Yes, sir.
16 Q And, now, these were all things -- I believe I
17 understood you to say that these were all things that were
18 provided to you by the plaintiffs' counsel in two cases in
19 which you've considered relevance to Westinghouse in the
20 timeline?
21 A You have a collection of what I have been given
22 concerning Westinghouse documents in both cases. What you
23 don't have is what I mentioned earlier, and that is
24 personal plaintiff-specific data pertaining to the other
25 case, the Eisenreich case.

45

1 Q All right. Fine.
2 And in terms of where the documents came from,
3 the source in terms of where the person that provided you
4 the documents got them, do you have any information on
5 that other than what's reflected on the document itself?
6 A The two sources I have for the documents are
7 from the Goldberg law firm and from the Nix Roach law
8 firm. And I don't know where they got the documents.
9 Q All right. That's my question.
10 In terms of deposition testimony or other forms
11 of sworn testimony -- and I want to exclude testimony by
12 the plaintiffs in either of these two cases -- have you
13 considered any testimony in the formation of opinions that
14 you have formed relevant to Westinghouse in this case?
15 A I'm not sure I understand the question.
16 Q Let me back up and try it again.
17 You've given me the documents that constitute
18 the written documentary evidence that you've considered in
19 reaching your conclusions related to Westinghouse;
20 correct?
21 A Yes.
22 Q Has there been any testimonial evidence, as in
23 deposition transcripts, trial transcripts, affidavits,
24 that you have considered in reaching conclusions related
25 to Westinghouse?

46 1 A I think I provided you all the information. I 2 did have a deposition some weeks ago -- and I can't 3 remember exactly which one -- where Westinghouse was 4 present and did ask some questions, but they were very 5 few, not pertaining to either of these cases. It was in a 6 different one. 7 Q And let me make sure that I'm making myself 8 clear. I may be trying to be too precise. 9 Is there any testimony that someone has given 10 about Westinghouse that you have read and considered in 11 putting together your conclusions? 12 A No. I've relied upon putting my conclusions 13 together in my timeline from the documents that I'm 14 presenting to you today. 15 Q And there are no transcripts of testimony or 16 affidavits that you rely on? 17 A To the best of my knowledge, there isn't. I'm 18 not sure I follow the question completely, but I produced 19 everything that I've relied upon in this case that we're 20 dealing with today. 21 Q All right. That's fine. 22 Okay. Let's take a look at the timeline at 23 this point. And I'm going to have some questions that 24 aren't specifically related to Westinghouse that are other 25 things in here. As we're going down the timeline under	48 1 necessarily -- that they shouldn't be banned necessarily; 2 correct? 3 A If the workers can be protected from exposure. 4 And the same is true with asbestos. I mean, that's the -- 5 that's the opinion that prevailed in the government at 6 that point in time. 7 Q And it's your opinion, I believe, that 8 certainly in the '40s and '50s an industrial hygienist who 9 was using as his benchmark the 5 million particle 10 threshold limit value would have been acting reasonably in 11 the performance of his industrial hygiene task? 12 A That was the only guidance limit that was 13 available at that time, so that would be true. 14 Q Let's move on down to 1908. And this is the 15 first Westinghouse document. And you have in parentheses 16 a reference number, 6771? 17 A Right. 18 Q Where does that reference number come into 19 the -- 20 A It's your first -- 1908. I'm sorry that they 21 didn't put a piece of paper on top of that. I thought 22 there should be a piece of paper between each of these 23 numbers. 24 Q They apparently didn't. 25 A Look and see if there is. There was supposed
47 1 the entry early 1888, there's a reference to crocidolite 2 not being actively mined until the demands for asbestos 3 during World War II. 4 A That's correct. 5 Q And I guess I've got a general question about 6 that. 7 Is it your position that the use of asbestos as 8 either an insulation material or a binder was 9 inappropriate from a public health standpoint let's say 10 for right now prior to 1972? 11 A If I understand your question, again, from a 12 public health point of view do I think it was 13 inappropriate to use asbestos all forms or just 14 crocidolite? 15 Q Yes. In any form. 16 A I think there was evidence that was very strong 17 prior to 1972 that asbestos had very severe health effects 18 and that the misuse of the material without protecting the 19 worker was inappropriate. 20 Q Let's back up from that somewhat. 21 There are many substances that are used in 22 industry that if proper industrial hygiene techniques are 23 not employed can be harmful; correct? 24 A That's correct. 25 Q But the use of those materials are not	49 1 to be after this last one. 2 Q I think they probably did not copy the 3 dividers. 4 A I'd asked them to put -- I didn't see your copy 5 before it went out because you all picked it up directly 6 from the copier. But I instructed them to put a piece of 7 paper between each. And if not, we'll just have to do 8 that as we go along. 9 Q Well, actually they did put a piece of paper in 10 between. It's got no writing on it. 11 A Well, we can correct that as we go along. 12 Q That's not a problem. We can do that. 13 A The first entry pertaining to 1908 is this 14 approximately 25, 30 pages that are showing up as black 15 with documents on top of them. 16 Q It looks like a little flip book, a little 17 notebook? 18 A Right. 19 Q That is 6771; correct? 20 A That is 6771. 21 Q And does this document have any relevance to 22 you other than your note indicating "Westinghouse began 23 its involvement with asbestos in 1908"? 24 A That's correct. That's what it has reference 25 to.

50 1 Q That's the extent of it? 2 A Yes, sir. 3 Q Okay. And certainly Westinghouse didn't hold 4 any exclusive position in being involved in asbestos at 5 that point in time; correct? 6 A I don't -- I don't understand your question. 7 Q A lot of other people were involved with 8 asbestos at the same time? 9 A Yes, sir. 10 Q And you wouldn't draw from that any conclusion 11 that would indicate that Westinghouse was behaving 12 unreasonably in becoming involved in asbestos? 13 A This document only tells me that they started 14 in 1908. 15 Q And you draw no further conclusion? 16 A Correct. 17 Q The next document is -- 18 A Did you want to mark that? 19 Q You know, I'm not sure what we should -- we may 20 ultimately need to go back through the process of having 21 those dividers -- having the thing copied again so that 22 it's a -- 23 A I'm sorry because they didn't really follow my 24 instructions. 25 Q I believe you entirely. It's not your fault.	52 1 Q And I believe that's the December 18, 1984, 2 document; correct? 3 A And attached to it is a Journal of Occupational 4 Medicine paper on -- 5 Q The Konicide Club? 6 A -- the Konicide Club. Those two go together. 7 Q And those are your 1932 reference, which I will 8 put in the upper right-hand corner 1932 and then below 9 that I'll put "Lemen" and circle it (indicating). You see 10 that? 11 A Yes. 12 Q Now, let's talk about any conclusions that you 13 draw from the reference to the Konicide Club. 14 A Basically the conclusions are that they, 15 Westinghouse, became one of the charter members of that 16 club. And as I said in my timeline, the club was formed 17 by Phil Drinker for the purpose of having occasional 18 meetings to discuss research problems on the relation of 19 dust to health; and that the Konicide Club was the 20 predecessor to the Industrial Health Foundation, which it 21 was later named in 1936; and that Westinghouse was a 22 member from '36 to '84. 23 Q Okay. Now, with reference to the Konicide 24 Club, if I can get my reading glasses out here, the 25 Konicide Club involved some of the top names in industrial
51 1 What we may have to do, though, we may -- 2 A It might save a lot of time, though, if you 3 just mark them now because you've got all the documents 4 there. If you just put the -- 5 Q Let's try that. 6 A If you just mark even in the corner of the 7 document. 8 Q On the first page of the document that you've 9 referred to as 6771 -- 10 A Right. 11 Q -- I am going to write the number 6771 and 12 circle it and below it put "Lemen." Do you see that? 13 A Yes. 14 Q Okay. We're on the same page then. When we're 15 through, we'll mark the whole stack. 16 A Okay. 17 Q Okay. The next document you have referred to, 18 I see a reference to Note 7137. What is that? Is that 19 the same -- 20 A That's the same in the document you just had. 21 Q All right. Moving over -- I'm going to go 22 through this first with reference to the Westinghouse 23 documents only, if we could. So it takes us forward to 24 your 1932 entry. 25 A Right.	53 1 hygiene in the '30s; correct? 2 A That's correct. 3 Q And, in fact, it was a group that included the 4 Bureau of Mines, Department of Interior? 5 A Yes. 6 Q And the Harvard School of Public Health? 7 A Right. 8 Q And the Metropolitan Life Insurance Company? 9 A Right. 10 Q And the Saranac Laboratory? 11 A Yes. 12 Q And the University of Pennsylvania? 13 A Yes. 14 Q Now, at that point in time, University of 15 Pennsylvania was one of the leading universities in the 16 study and treatment of the known pneumoconioses; is that 17 correct? 18 A That's correct. 19 Q And that was mainly because it happened that 20 they were in a heavy mining area? 21 A Correct. 22 Q And included in that group you had the state 23 department of health for the state of Connecticut? 24 A I believe that's correct. 25 Q In making reference to Westinghouse's

54 1 involvement in the formation of the Konicide Club and 2 later the Industrial Hygiene Foundation, do you draw any 3 conclusions that you would offer to the Court that 4 Westinghouse was in any way acting improperly in 5 participating in that organization? 6 A No, I would not. 7 Q And, in fact, it's an indication that 8 Westinghouse was at the front edge of investigating 9 occupational health issues; would it not? 10 A Yes. 11 Q Many of the participants in the Konicide Club, 12 including Dr. Drinker and Warren Cook and some of those 13 individuals, have been very widely published concerning 14 what they learned during the '30s and the '40s; is that 15 correct? 16 A That's correct. 17 Q Are you aware of anything that was learned 18 during Westinghouse's participation in the Konicide Club 19 that was not ultimately and really soon thereafter offered 20 to the public through publication and otherwise? 21 A No. 22 Q It would not be your conclusion that this was 23 any effort to secret away things that would be of interest 24 to the occupational health community; correct? 25 A I can't really comment on that.	56 1 of Westinghouse served on the executive committee from '34 2 to '35 and also was a past president. And in this 3 documentation we talk about the studies at Saranac Lake 4 and how Leroy Gardner who was very instrumental in the 5 early Saranac Lake studies of pneumoconiosis and 6 dust-producing diseases talked about at the National 7 Safety Council meeting the types of dust that caused 8 occupational-type diseases. 9 So the significance to this document is 10 Westinghouse was a participant; they were an officer, 11 represented as an officer; and that dust diseases were 12 talked about in their presence at this point in time. 13 Q And let me see if I can characterize what 14 you're saying. And if what I'm saying is wrong, please 15 tell me. 16 This entry in your mind or your conclusion 17 reached from this entry is that to the extent Westinghouse 18 as a corporation is trying to say we didn't have any way 19 of knowing that it was a problem, that there was a problem 20 related to asbestos anywhere, this document says to you, 21 well, you were participating in an organization where 22 there were discussions by people like Gardner about dust 23 that caused occupational disease. 24 A You're correct. 25 Q And do you know how many members the National
55 1 Q You're not aware of any evidence to that 2 effect; correct? 3 A No. 4 Q What I said was right? 5 A I'm not aware of any evidence. 6 Q That's got us. 7 Okay. The next document in my stack -- and I'm 8 trying not to get my stacks mixed up here. And excuse my 9 fumbling around -- is the 1934 transactions of the 10 National Safety Council. Is that in yours as well? 11 A Yes. 12 Q Where am I going to find that? I suppose 13 that's on page 6 of your timetable? 14 A That's correct. 15 Q Tell me what you know about the National Safety 16 Council and in particular in the 1930s. 17 A Well, the National Safety Council has a long 18 history of interest in originally safety issues. They 19 have developed that interest beginning in the '30s, maybe 20 somewhat a little bit earlier, in disease. And the 21 National Safety Council represented a broad array of 22 safety and health professionals employed by government, 23 employed by industry. 24 And what I said in my note was that Mr. Auel, 25 A-U-E-L -- I don't know how you pronounce that for sure --	57 1 Safety Council had in 1934? 2 A I don't know the exact number. I just know 3 from this document that they had a multitude of members as 4 you can see from the officers and the executive committee 5 and the directors that are listed in each of these. So it 6 was a broad-spanning organization with a multiple set of 7 members. 8 Q It was a very public organization. Would that 9 be a correct statement? 10 A Yes. 11 Q And certainly rather than trying to exclude 12 people from membership, they were attempting to attract 13 members? 14 A That's my understanding, yes, sir. 15 Q And they had sectional memberships that 16 included the roughly 24 industry groups that are listed 17 under the table of contents? 18 A Correct. 19 Q And among those industry groups was the metals 20 section; correct? 21 A That's correct. 22 Q And is it your understanding that the metals 23 section would have included those people in the 24 steelmaking industry? 25 A They should.

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1 Q And I think that if you go forward through the
2 years, you may well find that memberships included
3 specifically listed people?

4 A Yes. That's correct.

5 Q And so those other members would have likewise
6 had access to the National Safety Council and their
7 publications just like Westinghouse did; correct?

8 A Correct.

9 Q And, in fact, you didn't necessarily have to be
10 a member to get access to their publications; did you?

11 A That's correct.

12 Q It wouldn't be your conclusion that
13 Westinghouse was doing anything wrong by having someone on
14 the executive council of the National Safety Council;
15 would it?

16 A No, it would not.

17 Q And that, in fact, would be a good thing for a
18 company to do that was interested in promoting
19 occupational health?

20 A Certainly if they applied the knowledge they
21 gained from their membership to their employees it would
22 have been a good thing.

23 Q Absolutely.

24 The personal and financial support for the
25 organization certainly wouldn't have done anything to

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1 deter the public awareness of what was on the cutting edge
2 in the occupational health community; would it?

3 A That's correct.

4 Q All right. 1934. Help me out. What's the
5 next entry? 1936 is the next Westinghouse entry.

6 A 1936. And that is the deposition taken in 1992
7 of Mr. Brickenstaff [sic] who was an early Westinghouse
8 industrial hygienist.

9 Q Okay. That's actually Bickerstaff,
10 B-I-C-K-E-R-S-T-A-F-F.

11 A What did I say?

12 Q I think you said "Brickenstaff," but that's not
13 a problem.

14 (Discussion held off the record.)

15 Q (By Mr. Weathersby) Now, I guess that's one of
16 the questions that I was alluding to, and I didn't know
17 where to find the reference earlier.

18 Is this a deposition that you've had access to
19 and read?

20 A Just parts of it. I have not read the entire
21 deposition. But the parts I have had access to I have
22 included in this document. And that's what I --

23 Q Included it in the stack --

24 A In the material.

25 Q -- of documents we're going through right now?

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1 A Yes.

2 And the importance of this is to indicate that
3 he indicated that E. C. Barnes and Wilbur Speicher were
4 members of the Industrial Health Foundation in 1936.

5 Again, it's supporting the fact that
6 Westinghouse was involved in organizations that were
7 dealing with dust-related diseases and were aware of the
8 research that was being conducted.

9 Q And would I be correct in suggesting that a
10 reasonable conclusion from their participation in the IHF
11 and the National Safety Council is that Westinghouse would
12 likely have had access to publicly published opinions on
13 both sides of issues relating to asbestos, both the good
14 and the bad?

15 A They would have that. And they might have
16 through the Industrial Hygiene Foundation the information
17 provided to them that was not published but that was being
18 released from studies that the Industrial Health
19 Foundation was sponsoring. So they may have actually had
20 earlier knowledge than the general public would have had
21 privilege to through scientific publications.

22 Q So, in other words, your conclusion is that to
23 the extent the Industrial Hygiene Foundation was
24 developing information and disseminating it to their
25 members, Westinghouse may have had an earlier access to

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1 information?

2 A Westinghouse and the other members would have
3 probably had earlier access to that information before it
4 appeared in the scientific journals.

5 Q Is there anything as of 1936 that in your
6 opinion Westinghouse would have had access to that would
7 have been superior to publicly available information?

8 A Well, as I said, they would have had
9 information available through the meetings that they
10 attended that may be presented for the first time of some
11 of the Saranac Lake studies and others that were sponsored
12 by IHF; and, therefore, they would have the advantage of
13 having the ability to talk to other members about what the
14 significance of those studies were, how to interpret those
15 studies, and how those studies may apply to their work
16 force in relationship to any suspect of developing disease
17 and also how they may apply in alerting them to look at
18 their work force or putting preventative steps in place
19 that might protect their work force.

20 Q And do we have or do you have an understanding
21 of who separate and apart from Westinghouse was engaged in
22 the Industrial Hygiene Foundation?

23 A Well, there are several references. If you
24 look at the reference right above that, 1936. It doesn't
25 say Westinghouse, but it talks about the IHF, first called

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1 the Air Hygiene Foundation, which was founded by the
2 Mellon Institute, and its membership was composed of a
3 cross-section of large industrial companies. And it goes
4 on to say that the IHF conducted medical and industrial
5 hygiene surveys.

6 You can go to the references that I gave in
7 here and you can find in those references more specific
8 reference to the companies that were members of IHF.

9 Q Let me see if I can characterize it.

10 It's your understanding that the IHF had a
11 broad membership among the industrial community?

12 A That's correct.

13 Q And is it your understanding also that the IHF
14 had a broad representation among the academics, the
15 universities?

16 A There were academics and universities involved.
17 It's a conglomerate organization meant to provide industry
18 with data concerning dust and disease.

19 Q And the meetings of the IHF were covered by the
20 news media as well; correct?

21 A That's my understanding.

22 Q And so the developments that were occurring
23 within the IHF at that point in time were developments
24 that the outside nonmembership community would have had
25 access to through the news media; is that correct?

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1 A That's correct.

2 Q Okay. And again, I don't mean to be overly
3 repetitious, but I want to make sure we're not getting to
4 the point along the way that it's your opinion there's
5 something unreasonable about what's happening here.

6 At this point in time during Westinghouse's
7 membership in, first, the Air Hygiene Foundation and then
8 the IHF, their participation in that organization in and
9 of itself would not be an indication that they were
10 behaving unreasonably as a manufacturer or an employer
11 with regard to occupational health; is that a correct
12 statement?

13 A Well, I think insofar as the IHF made their
14 information available outside the circle of companies and
15 so forth, yes, that would be true.

16 Q That would be a good thing for a company to do?

17 A If they applied the information that they
18 gained in their participation in this organization to
19 their own work force to prevent disease as they learned
20 disease was occurring, it would have been a good thing.

21 Q And if the organization was participating in
22 sponsoring research that academics or medical community
23 people were ultimately publishing, that would be good for
24 the public as a whole; would it not?

25 A If that information was representative of the

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1 research that was being done and not altered before it was
2 published, yes, that would have been a good thing.

3 Q Are you aware of any indication that

4 Westinghouse was an active participant in either the
5 alteration or the suppression of any research related to
6 asbestos that was conducted by the IHF or its constituent
7 members?

8 A I have no evidence of that.

9 Q Okay. The next document, I believe, is 1936
10 where it says Westinghouse became a charter member of the
11 IHF?

12 A Right.

13 Q We've sort of covered that; haven't we?

14 A Yes. And what you have in your binder is just
15 evidence showing that.

16 Q And let me go back to this Bickerstaff
17 deposition issue for just a second, if I might.

18 You aren't drawing any conclusions from the
19 Bickerstaff deposition other than participation -- than
20 Westinghouse industrial hygienists' participation in the
21 IHF; correct?

22 A I think the document -- I'm not trying to be
23 difficult, but it speaks for itself, and what I wrote for
24 the timeline speaks for itself. And that's true.

25 Q And, of course, in -- would you agree with me

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1 that there's at least two problems that exist in
2 considering testimony in drawing conclusions: One is you
3 need to see both sides of the testimony, that is, the
4 testimony that's offered and the testimony that the other
5 side comes in and cross-examines to get a full picture?

6 A Yes.

7 Q Would you agree with me on that?

8 A I agree.

9 Q And the next thing that's a problem that occurs
10 in many, many lawsuits is in considering deposition
11 testimony there is also the possibility that the
12 deposition testimony may not reflect the truth, the whole
13 truth, and nothing but the truth; correct?

14 A I don't know how to answer that. I mean, the
15 person is sworn. That's supposed to represent the truth
16 as that person being deposed sees it.

17 Q And in drawing your conclusions in considering
18 deposition testimony, do you do any weighing of the
19 credibility in reaching your conclusion?

20 A When I review deposition testimony, I take it
21 as what is said in the deposition and do not try and
22 cross-examine in my mind what they meant but to take it as
23 it's stated in the deposition.

24 Q Which is basically the next step in weighing it
25 is the jury function; right?

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1 A That's right.
 2 Q And included in the stack is all the
 3 Bickerstaff testimony that you had access to; correct?
 4 A It's the -- yes. That's correct.
 5 Q All right. Next is a 1938 Westinghouse
 6 document. And this is the document that -- am I correct
 7 that this is the one beginning with 7188 or have we
 8 already passed that one?
 9 A Oh, that was the previous one.
 10 Q That was in conjunction with Bickerstaff?
 11 A No. That was the 1936, Westinghouse became a
 12 charter member of the IHF.
 13 Q Okay. I flipped past that one inadvertently.
 14 And I believe that on pages 63 to 65 there's a list of
 15 other members of the Air Hygiene Foundation as of 1937;
 16 correct?
 17 A Right. Which I call the IHF because I had
 18 mentioned earlier that the name did change. Anyway, I
 19 think it's clear.
 20 Q All right. Now I think I've caught up with you
 21 and we have the documents you reference under 1938.
 22 A 6715 is the reference number.
 23 Q Let me make sure. Is this the right front page
 24 (indicating)?
 25 A Right.

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1 Q I'm going to write that number on here, 6715;
 2 is that correct?
 3 A 6715.
 4 Q Okay. And you'll see I've written it on and
 5 circled it with your name under it (indicating); correct?
 6 A Yes.
 7 Q And flipping over, I see that there's a
 8 plaintiff's exhibit referencing that as well?
 9 A Yes.
 10 Q All right. Tell me what conclusions that you
 11 have drawn from the two pages that are marked 6715.
 12 A I don't know if this will speed up the
 13 deposition or anything, but when you ask me a question
 14 like that, the conclusions that I have drawn are what I've
 15 written in my timeline.
 16 Q And am I safe in assuming that you feel that
 17 you have set out your complete conclusion as to what the
 18 document meant to you in your study?
 19 A That's correct. Unless during trial or future
 20 testimony I am asked more questions about the document.
 21 But my opinion at this point in time is what I have put in
 22 the timeline as the significance of that document.
 23 Now, if you or Mr. Roach would ask me about
 24 another sentence in here and what does that mean, that
 25 might draw a second conclusion. But as I read it sitting

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1 here today, this is what I take from the document for my
 2 purposes in this evaluation. Do you understand that?
 3 Q I understand that. I sure do.
 4 Now, Document 6715 you have described as a
 5 product specification for blanket insulation.
 6 A Right.
 7 Q Do you know by whom the blanket referenced in
 8 this document was constructed?
 9 A By who made it?
 10 Q Yes, sir, by whom.
 11 A I don't know exactly except that if you look in
 12 the middle of the document it talks about the blanket
 13 company and gives an address for that company, and I
 14 presume that that's who made the blanket.
 15 Q Do you know what these blankets were used for?
 16 A It does not indicate the use of the blankets.
 17 It just says that: "This specification covers blankets,
 18 bags, or mattresses for removable heat insulation for
 19 steam turbine casings, valves and other parts. The
 20 insulation should be suitable for temperatures over 850
 21 degrees Fahrenheit."
 22 So to me that's the explanation of what they
 23 were being used for.
 24 Q And do we know or do you have an opinion as to
 25 whether this was the only type of blanket that was used

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1 for applications over 850 degrees?
 2 A At this point in time, 1938, that's the only
 3 information I have on the type of blanket that was used.
 4 Q You're not saying there were no more. You're
 5 saying that's the only one you have information on;
 6 correct?
 7 A There could be more, but I don't have
 8 information in 1938 to say that there were any others.
 9 Q And is it correct that you also wouldn't know
 10 what quantity they were procured in or how long they were
 11 used?
 12 A That's correct.
 13 Q Okay. The next Westinghouse document, I
 14 believe, is Document 6716, which I have and is already
 15 marked in my stack.
 16 Now, this is I believe one of the documents
 17 that is referred to as an Air Hygiene Foundation document?
 18 A That's correct.
 19 Q And other than, A, Westinghouse's membership in
 20 the organization, and B, a stamp that doesn't appear on
 21 the original which says Westinghouse, North Carolina, is
 22 there any connection you make between Westinghouse and
 23 this document?
 24 A No.
 25 Q And I assume that the stamp over the document

70 1 that says Westinghouse, North Carolina, was on the 2 document before you got it? 3 A It was on the document when I received it. I 4 don't know who placed it on the document. 5 Q Now, within the content of this Air Hygiene 6 Foundation document, there's a discussion about 7 compensation for temporary partial disability and 8 employers' liability. 9 Am I correct -- and it's something I don't 10 think I've seen discussed before in your testimony. But 11 am I correct that you would not consider it inappropriate 12 for a company to attempt to stay current on whatever the 13 law was relating to Workers' Compensation, injury 14 schedules, or compensation schedules? 15 A That's correct. 16 Q In fact, they should stay current on it; 17 correct? 18 A Yes. 19 Q And that would be true whether we're in 20 Pittsburgh or in Texas or wherever; correct? 21 A That's correct. 22 Q And would it be reasonable for someone dealing 23 with Westinghouse or any other company to assume that that 24 company was staying current on Workers' Compensation laws 25 in the state where they operate?	72 1 A 7398 and 7399. 2 Q I'm sorry. It's that darn dyslexia again. 3 Okay. Anything here other than what you've got 4 stated in the document that is important to you from 7398 5 and 7399? And let me try that another way. 6 Your reading of, first, 7398, which is 7 Medical-Engineering Control of Industrial Health Hazards 8 by Lyle Hazlett -- 9 A Right. 10 Q -- am I correct that your reading of this would 11 be for the purpose of drawing the conclusion that 12 Westinghouse had a medical director who was publishing on 13 the subject of medical-engineering control of industrial 14 health hazards and that Westinghouse appeared to be as 15 current on the subject as anybody in the business? 16 Anything more than that? 17 A I imply nothing more than what I've written 18 here. 19 Q The second document in that series -- and 20 correct me if I'm wrong -- appears to be a Southern 21 Medical Journal document dated November 1941? 22 A Yes. That's correct. 23 Q And is that the one-page document (indicating)? 24 A Well, I can't find the thing. Well, it's more 25 than one page.
71 1 A Your question was would it be reasonable? 2 Q Yes, sir. 3 A It would be reasonable that they should stay 4 current and use that information in applying prevention 5 strategies within their own work force to eliminate their 6 need to pay compensation costs. 7 Q And, further, there wouldn't be anything wrong 8 with a company attempting to utilize Workers' Compensation 9 law to its best legal advantage in not paying compensation 10 claims; would there? 11 A I think they should use compensation law to 12 look at what's happening and to see if that same thing 13 could happen in their facility; and if it could, then to 14 apply preventive measures so they would cut down on their 15 own liability through compensation. So it's a tool for 16 them to learn about prevention and to apply prevention. 17 Q And it's ultimately to the good of the worker 18 if a company is attempting to apply Workers' Compensation 19 laws so that they don't become liable? 20 A If they use the information to prevent disease 21 and injury in their workplace, that's a very reasonable 22 thing. 23 Q Okay. The next document is I believe 1939, and 24 Westinghouse Document 3898 and 3899 is what you have 25 referred to as.	73 1 Q I think I only got one page. 2 A Well, we need to mark that then. It looks like 3 there -- what's underneath that right there? 4 Q I've got a blank page underneath that and then 5 a metals section. Let me make sure they didn't get mixed 6 up or shuffled in the copy process. 7 What is at the head of the second page of your 8 Southern Medical -- 9 A Page number is 1128. 10 Q That's what it is. They got shuffled in the 11 process. 12 A Shuffled. 13 Q Okay. 14 A It should be 1127, 1128, 1129, 1130 and then 15 you go to your metals section. 16 Q Okay. I see what I did. I took the last page 17 and attached the rest to the preceding. 18 All right. 7399 is a Southern Medical Journal 19 article entitled The Practice of Industrial Health by Lyle 20 Hazlett; correct? 21 A Right. 22 Q And I guess the only thing I would ask about 23 your conclusions, it would be a good thing, would it not, 24 for a company to allow and to encourage their medical 25 director to publish current information on subjects such

74 1 as the practice of industrial health? 2 A Yes. 3 Q And does your reading of this article indicate 4 that it's anything other than good and current 5 information? 6 A Well, it indicates to me what Dr. Hazlett's 7 theories and knowledge were about industrial -- the 8 practice of industrial health and gives me insight into 9 what he was doing within his company for that practice. 10 And I think his paper, without going through it line for 11 line, really speaks to that in it. 12 Q And do you draw any conclusion from that paper 13 that Westinghouse was in any way lagging behind the 14 community in terms of industrial health? 15 A No. 16 Q Now, on page 1129, there's some arrows drawn. 17 A I didn't draw those. I don't know who drew 18 those. 19 Q Those were there when you got them? 20 A Yes. I don't think that I've made any markings 21 on any of the documents. 22 Q Okay. The next document then, 1943. 23 A All right. You need to skip through that 24 because that was all attachment to the previous one, just 25 indicating that he served -- that's the documentation	76 1 A That's correct. 2 Q I just want to make sure that I've got the 3 whole thing that you have as we're flipping through. 4 A It looks like the copy company put my tab in 5 the wrong place. 6 Q The quote that you have -- and I'm not sure 7 exactly where it comes out -- is: "The use of water 8 repellant asbestos insulation has recently replaced some 9 types of material formerly used in ship work." 10 This particular material would not have had 11 specific relevance to the steel mill setting; would it? 12 A Not specifically. It may have. 13 Q May have ultimately, but in this context it was 14 for a shipboard -- 15 A That's what it was developed for, but I think 16 it was also utilized in other applications beyond the 17 shipboard application. 18 Q Do you know whether that particular 19 water-repellant insulation material was in a block or a 20 mixable or a pipe covering form? 21 A I don't know specifically. 22 Q Is it correct for me to assume that the extent 23 of the information you have about that water-repellant 24 asbestos insulation is what you find in this document? 25 A That's correct.
75 1 showing that Dr. Hazlett served in the -- 2 Q Various sections? 3 A Yes. 4 Q Let me take a look at those then before we move 5 on. 6 What you've just indicated to me -- let me back 7 up. If you need to take a break at any time -- 8 MR. ROACH: It's lunchtime. It's noon. 9 MR. WEATHERSBY: You're on central time. 10 (Discussion held off the record.) 11 --- 12 (Whereupon, a luncheon recess was taken from 13 11:59 a.m. to 12:55 p.m.) 14 --- 15 Q (By Mr. Weathersby) Okay, Dr. Lemen. We're up 16 to 1943. And I believe we've got the 32nd National Safety 17 Council meeting. These are actually transactions in the 18 congress. 19 Now, is it your understanding that the National 20 Safety Council publishes transactions every year of their 21 annual meetings? 22 A Yes. 23 Q And at each of those meetings there are 24 speakers who come and present papers and section meetings 25 are held?	77 1 Q That brings up a subject that I wanted to get 2 into very briefly. 3 I'm assuming that the reason this is here is 4 you're offering it as an indication that there was, A, 5 awareness and publication in the National Safety Council 6 transactions that there's a dust hazard in the ship work; 7 and, B, that there are new products being developed 8 related to reduction of dust? 9 A That's correct. Both of those are correct. 10 Q Now, if a company or an individual is a user of 11 asbestos-containing materials that are acquired from 12 someone else, would it be your position that as of -- 13 let's see if we can get a scope of years here -- the '40s, 14 '50s, and '60s, that end user had any responsibility to go 15 out and investigate the development of less dusty 16 insulation or asbestos-containing products? 17 A Well, as I've testified in previous testimony, 18 I think that the responsibility of protecting the workers 19 lies with both the manufacturer and the end product user. 20 And it lies with the fact that the manufacturer should 21 properly label their material and that the end product 22 users should follow those directions in protecting their 23 workers. I don't necessarily say that the end product 24 user is necessarily in a position to go out and research 25 new types of products. That's really the manufacturing

78 1 sector's research agenda. 2 Q The end product user, the workplace user, has 3 their own responsibility? 4 A That's correct. 5 Q And that's to maintain a safe workplace? 6 A That's correct. 7 Q And in terms of the role that the end product 8 or the workplace user can play, would you agree that they 9 are in the best position to do things like engineering 10 controls and dust monitoring? 11 A The end product user? 12 Q Yes, sir. 13 A Yes, sir. 14 Q And that's their responsibility? 15 A Yes, sir. But it does not negate the 16 responsibility of the manufacturer to warn of the 17 potential hazards from the use of their product, whether 18 it be misuse or just general use. 19 Q I assume that it would be your view -- and I 20 think the medical literature would give you some support 21 on it -- that people who are in the proximity of the user 22 may be exposed to airborne asbestos fibers released by 23 that use? 24 A That's correct. 25 Q We're not in disagreement with that I don't	80 1 Q And certainly there's training available or 2 even back then there was training available through 3 organizations like the National Safety Congress and the 4 United States government equivalent of the Department of 5 Labor? 6 A That's correct. 7 Q And I'm not sure. Was there a Department of 8 Labor in the 1940s? I can't remember what they called it 9 then. 10 A I think it was called Department of Labor, but 11 I'd have to go back -- 12 Q I couldn't remember exactly when it came in. 13 But at any rate, the state and the federal 14 government had training programs in place -- 15 A Right. 16 Q -- that were offered, especially to large 17 employers; correct? 18 A Through industrial commissions and 19 organizations such as that. 20 Q And certainly the documents that we've seen in 21 your collection and that are referenced through here 22 indicates that at least as far as having occupational 23 health and industrial hygiene people on staff, 24 Westinghouse had a history of providing that to their 25 facilities; correct?
79 1 think. 2 A No, sir. 3 Q And would you agree with me that in many 4 settings any of the original packaging, boxes or if there 5 were material data sheets that came with the product, by 6 the time they got to the ultimate location on the 7 workplace, those warnings may not still be in place? 8 A That's a possibility. 9 Q A possibility. 10 In a setting such as a large industrial 11 facility like a steel mill, would you consider it to be 12 reasonable for a manufacturer to provide warnings 13 concerning the hazards associated with asbestos to the 14 employer or the plant manager or his industrial hygienist? 15 A I think it would be appropriate that that be 16 done. 17 Q And a facility with literally tens of thousands 18 of employees even as far back as the 1940s and the 1950s, 19 would you expect a facility of that size to have had an 20 industrial hygienist or I think they called them sometimes 21 gas-free chemists? 22 A They sometimes called them safety personnel. 23 Yes. I would in a large company expect that to 24 be the case. They may end up being people that don't have 25 a lot of training, but they are designated as a safety --	81 1 A That's what it appears from the data that I 2 have. 3 Q All right. Let's move on forward, if we might, 4 to 1946. And it's a memo from Barnes to the works manager 5 at South Philadelphia, I believe. Let me just look over 6 your pad there to see where that is. 7 Okay. I've got you. 6981 is the sticker, I 8 believe? 9 A Right. 10 Q Your quote from the document reflects an 11 indication that Barnes is discussing potential health 12 hazards in the use of asbestos for manufacture of lagging; 13 right? 14 A Right. 15 Q And would you agree that that appears to be in 16 the context of this use within a Westinghouse facility? 17 A Yes. 18 Q And is that the way occupational health in the 19 workplace was normally treated in the pre-OSHA days, that 20 is, the employer was looking out for his facility? 21 A Well, it really depended state by state because 22 some states had state labor departments, industrial 23 commissions that did inspections. 24 For example, the state of Pennsylvania goes 25 back many, many years. And other states such as maybe

82 1 South Dakota or Kansas didn't have such commissions. 2 So the responsibility in cases where there 3 wasn't a state organization usually fell to the employer 4 or the manufacturer facility or end product using facility 5 to provide that protection. 6 Q And in this case, even though the Westinghouse 7 facility was in Pennsylvania, they are also providing 8 their in-house people to oversee that; correct? 9 A That's correct. 10 Q And I believe there's discussion in this 11 document about the substitution of fiberglass -- 12 A Yes. 13 Q -- for the filling in the blankets? 14 A Right. 15 Q Do you know the extent to which that 16 substitution was occurring within the Westinghouse 17 organization? 18 A I know nothing beyond what is stated in the 19 two-page document that you have here. 20 Q Now, as of this time, that being roughly 1946, 21 at that point in time there was at least some controversy 22 over whether fiberglass was also the source of a health 23 hazard; was there not? 24 A I think from the very beginning of the 25 knowledge about asbestos and the manufacturing then of	84 1 Q Would the same be true for pipe covering? 2 A That's correct. 3 Q And insulation block? 4 A That's correct. 5 Q How about as of 1960, would the answer be the 6 same? 7 A Again, my answer would be that I don't know 8 because I haven't researched that. 9 Q Rather than skipping through all the decades, 10 have you researched it as of any time subsequent to 1960? 11 A Well, my statement would be that I do know that 12 in most cases you can manufacture out the health hazard of 13 fibrous glass by manufacturing fibrous glass that is not 14 respirable. And if you do that, then you do not have a 15 respiratory hazard related to the fibrous glass. 16 So I do know that there are engineering 17 methodologies in the manufacturing process to manufacture 18 substitute materials that are not respirable. And if 19 they're not respirable, then they don't present a 20 respiratory health hazard. And, you know, my expertise 21 has been more into the health effects and not into the 22 manufacturing process, but I have looked at that part of 23 it. 24 Q So is it correct then to characterize your 25 knowledge of that of the substitute materials as something
83 1 fibrous glass, there was a concern of whether the 2 substitution of fiberglass was any better than the use of 3 asbestos. 4 Q So am I correct in following up on your 5 statement that it would be your opinion that a 6 manufacturer or a user would not necessarily be exercising 7 ultimate prudence in making a wholesale substitution as of 8 that time? 9 A That's correct. 10 Q Because at that time you didn't know whether 11 you were really improving the situation because of a 12 substitution of fiberglass; right? 13 A That's correct. 14 Q And, of course, your position would be that the 15 ultimate remedy available to the user was industrial 16 hygiene controls? 17 A Or the substitution of substances that could do 18 the same thing that had no known health effect. 19 Q Do you know as of -- let's try to go end of 20 this decade. 21 As of 1950 do you know whether there was an 22 acceptable substitute for asbestos filling for turbine 23 blankets? 24 A I really have not researched that, so I can't 25 answer that question.	85 1 that you have learned incident to your study of 2 occupational health rather than a primary study? 3 A Well, I have looked specifically at some 4 substitutes. I have looked at fibrous glass. I have 5 looked at refractory ceramic fibers, wollastonite, 6 albanite, and some of those. And that has been ancillary 7 to my study of asbestos. 8 Q Do you know when in time the more highly 9 engineered, for lack of a better term, fibrous glass 10 became available on the commercial market? 11 A Well, I think with the implementation of the 12 Occupational Safety and Health Act it gave an impetus to 13 the manufacturers of fibrous glass to look seriously into 14 trying to manufacture products that didn't carry a similar 15 health hazard to asbestos. So I would put the decade in 16 the '70s. 17 Q We're now looking at Document 6981. 18 A And for some reason I had that document and 19 I've misplaced it, so it's listed in your table as a 20 missing document, but you'll just have to take my word 21 until I can put my hands on it that what it says it says. 22 Q And based on the quote, is this anything more 23 than carrying forward your earlier observation that 24 Westinghouse appeared to be applying industrial hygiene 25 principles, maybe not perfect, but applying industrial

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1 hygiene principles within its own facility?

2 **A Yes. I think the quote stands very well to**
 3 **itself that they were doing medical examinations and they**
 4 **were finding some situations where the lung conditions**
 5 **might possibly be associated with exposure to dust, so**
 6 **therefore they ought to take precautions to further**
 7 **prevent that.**

8 **Q If we assume that Westinghouse was**
 9 **implementing -- let's take it out of the Westinghouse**
 10 **context. Let's make it a pure hypothetical.**

11 **If you were to assume that an employer or a**
 12 **facility owner was implementing industrial hygiene**
 13 **engineering controls, dust controls, that had been put**
 14 **into the published literature in the late '30s beginning**
 15 **with the Dreessen report and in the '40s with what was**
 16 **learned during World War II and with the Fleischer-Drinker**
 17 **study reflecting that, the fact that an employer began to**
 18 **see evidence of asbestos-related changes in the work force**
 19 **in the following decade, that wouldn't necessarily mean**
 20 **that there was a problem in the present work environment;**
 21 **would it?**

22 **A You mean if they were seeing disease a decade**
 23 **after they had implemented their preventive -- in the case**
 24 **of asbestos-related disease, it has a latency period and**
 25 **can reflect and generally does reflect exposures that**

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1 **occurred in the past. However, there are some indicators**
 2 **that could give them early warnings such as decrements in**
 3 **pulmonary function that tend to occur before you see overt**
 4 **disease. But you're correct in making that assumption.**

5 **Q So basically if I'm an employer and I am**
 6 **following Fleischer-Drinker by the book and have been**
 7 **doing that for ten years, yet when I begin my medical**
 8 **surveillance I find disease, that doesn't necessarily mean**
 9 **that as of that point in time my present work environment**
 10 **is a problem?**

11 **A No. You have to -- I think the way you have to**
 12 **address that is to -- if you are applying principles --**
 13 **and I've always said in my depositions that if you're**
 14 **applying -- that the Fleischer-Drinker study is an example**
 15 **of good industrial hygiene practice and that's why they**
 16 **had such a good low prevalence of disease. They did have**
 17 **disease by the way in the Fleischer-Drinker, but it was a**
 18 **fairly low prevalence; that the only way if you're**
 19 **applying one of those principles, which would include**
 20 **monitoring your workplace to see that your dust counts**
 21 **were low and that your ventilation was working**
 22 **effectively, you could have a very clean environment but**
 23 **still see disease such as asbestosis and lung cancer**
 24 **developing in workers that that exposure reflected their**
 25 **exposures previously.**

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1 **Q And going back to the Fleischer-Drinker study,**
 2 **while most of the conclusions I think you would agree**
 3 **Fleischer-Drinker came out with were pretty accurate --**

4 **A Correct.**

5 **Q -- they were perhaps premature because the**
 6 **latency approximate of some of the diseases had not been**
 7 **recognized. Would that be a correct statement?**

8 **A I'm not sure I follow you by what you mean by**
 9 **"premature." You mean, for example, mesothelioma really**
 10 **was not recognized at that time?**

11 **Q That's exactly what I mean.**

12 **A Yes. I would agree with that.**

13 **Q Fleischer-Drinker basically concluded, I**
 14 **believe, that if you can keep the dust levels down and 5**
 15 **million particles being the benchmark that was recognized**
 16 **there, that the pipe covering trade would not be a**
 17 **dangerous business; right?**

18 **A And that's what their conclusion was and that's**
 19 **what they were looking at, the disease asbestosis.**
 20 **Because, as you recall, the Fleischer-Drinker study was a**
 21 **cross-sectional study. It was not a retrospective. It**
 22 **didn't include anyone that had left employment. So it was**
 23 **just looking at the current work force. And I think that**
 24 **their limitations for that study would have given them the**
 25 **ability to really only detect the asbestosis and the -- so**

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1 **I think that's the significance of that study.**

2 **Q Okay. Let's move forward.**
 3 **It looks like the next thing we got is a**
 4 **process specification, 6745. I'm not sure I've got that**
 5 **either or have I skipped one?**

6 **MR. ROACH: No, you didn't skip.**

7 **A What year are you at?**

8 **(By Mr. Weathersby) Well --**

9 **A I thought I was following you.**

10 **Q I thought I was at 1946.**

11 **A Yeah. 1946?**

12 **Q Yes, sir. At the very top of page --**

13 **A 6983. Okay. You're right.**

14 **All of these comments here deal with the**
 15 **January 11th, so we're now -- we go from January 11th to**
 16 **April. I don't know what is happening here.**

17 **Q Yeah. The one I'm missing, I think, is the**
 18 **6745, the 1946 process specification.**

19 **I may be able to ask you questions about that**
 20 **without actually having it in hand.**

21 **A What page are you on?**

22 **Q Of this document?**

23 **A Yeah.**

24 **Q I'm at the top of page 11, the very first entry**
 25 **there.**

90 1 A I got it. 2 Q And I have not been able to put my fingers on 3 that document. 4 A That was in -- 5 MR. ROACH: That's the missing document. 6 A That's the missing document. 7 Q (By Mr. Weathersby) If you can answer it from 8 your recollection. 9 A Yeah. That's the missing one, I'm sorry. 10 Q So we're missing 6745? 11 A Right. 12 Q If you can recall from the document; and if you 13 can't, that's fine. 14 Do you know what this was a process 15 specification for, if you'll -- (pause). 16 A I think it was a general use process 17 specification dealing with any of the products that 18 contained asbestos and advising the use of respirators for 19 that. 20 Q Do you recall whether there was any conditional 21 precedent for the use of respirators, that being when dust 22 is above a certain level or anything like that? 23 A Again, I would have to go back to the document 24 to see that. 25 Q Well, we can move on from there.	92 1 Q Certainly all the way up through the years 2 people like Selikoff did not advocate respirators as the 3 answers; did he? 4 A That's correct. 5 Q In fact, he said that you couldn't expect 6 workers to actually use them on a regular basis? 7 A Right. 8 Q The next document is 6983, and we do have that 9 one. 10 A You should have that one. 11 Q We're in good shape on that one. 12 It raises some issues of Micarta. What's your 13 familiarity with the product Micarta? 14 A Other than what I've read in these documents, I 15 haven't really any other knowledge about Micarta. 16 Q In other words, do you know how many different 17 varieties of Micarta were produced? 18 A No. 19 Q Do you know what percentage of the Micarta 20 produced contained asbestos? 21 A No. 22 Q Do you know the form the asbestos was in within 23 the Micarta? 24 A By "form" you mean as a powder or dust? 25 Q A powder, as a gasket-type material, as a
91 1 Let me ask this. Maybe I can get the same 2 information. Is it your opinion that resort to 3 respirators is the final option in the hierarchy of 4 industrial hygiene procedures? 5 A Well, the hierarchy of industrial hygiene 6 procedures really hasn't changed all that much. First you 7 substitute. Second you provide engineering controls. And 8 if that fails, then you go to personal protective 9 equipment which would include respirators. So it is the 10 bottom level. 11 Q And of those I think three levels if I'm not 12 mistaken -- 13 A Yes. 14 Q -- substitute, Step 1, that is contingent on 15 the availability of an acceptable substitute; correct? 16 A Correct. 17 Q And engineering controls, those would be local 18 workplace controls that would be put in place; correct? 19 A Yes. 20 Q And finally the use of respirators again would 21 be something controlled in the workplace? 22 A Right. 23 And respirators should be looked at as only an 24 interim measuring while effective engineering controls are 25 being sought.	93 1 paper, how the asbestos was incorporated. 2 A I'm really not familiar with the product and 3 its specifications. 4 Q Looking at this particular document where 5 there's concern over skin irritation here, do you have any 6 indication that the concern is related to exclusively 7 asbestos, asbestos plus something else, or some other 8 constituent material in the Micarta? 9 A Well, more likely the irritation is due to some 10 binding agents that were used in the Micarta. They could 11 be referring to asbestos skin irritations because we do 12 know that asbestos can cause asbestos warts, and that 13 could be considered a skin irritation. But when you're 14 talking about rashes and stuff of that nature, it's more 15 than likely that it's the binding agent that's applied 16 with the asbestos. 17 Q Some material in it other than the asbestos 18 itself? 19 A It could be, yes. 20 Q All right. The next document is a reference to 21 a Bickerstaff deposition. 22 A Right. 23 Q And I believe you've got that excerpt -- 24 A Yes. 25 Q -- included here.

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1 And again, is this simply to further reiterate
 2 your earlier observation that Westinghouse was aware of
 3 hazards associated with asbestos in the '40s?
 4 **A That's correct.**
 5 **Q** Does this deposition excerpt that you have here
 6 say to you or inform you as to which disease conditions
 7 Westinghouse was aware of in the '40s?
 8 **A You mean whether or not they were aware of**
 9 **mesothelioma or lung cancer?**
 10 **Q** The causal relationship between asbestos and
 11 lung cancer, asbestos and mesothelioma?
 12 **A Uh-huh. I think that they were relation -- it**
 13 **related to their knowledge at that time of the lung**
 14 **conditions associated with asbestos exposure.**
 15 **Q** I'm just looking to see where in the deposition
 16 you're focusing.
 17 Now, there's a summary of the Bickerstaff
 18 deposition.
 19 **A Yeah.**
 20 **Q** You didn't prepare that; did you?
 21 **A No, I did not.**
 22 **Q** Do you know what Mr. Bickerstaff's job was with
 23 Westinghouse?
 24 **A I thought I explained that earlier on that**
 25 **Mr. Bickerstaff -- let me just look. I think it's in one**

95

1 of the -- he was a -- he was --
 2 **Q** Your summary says manager of industrial
 3 hygiene.
 4 **A Right. I think that's what he is.**
 5 **Q** Do you know where his office was physically
 6 located?
 7 **A No, I do not.**
 8 **Q** Do you know how many facilities Mr. Bickerstaff
 9 was responsible for?
 10 **A Well, it appears to me that he was responsible**
 11 **for all the Westinghouse facilities since he was manager**
 12 **and that Westinghouse had some 50 industrial hygienists**
 13 **that they had.**
 14 **Q** As of the 1940s?
 15 **A Yeah. It appears to me that he was responsible**
 16 **for all corporatewide industrial hygiene.**
 17 **Q** As of -- well, let's use, for an example, or a
 18 beginning point the year that the ACGIH first published
 19 their TLV for asbestos. And that was --
 20 **A 1946.**
 21 **Q** -- 1946.
 22 As of 1946, do you know approximately how many
 23 industrial hygienists there were in the United States?
 24 **A No.**
 25 **Q** But it's your understanding that as of the

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1 1940s, Westinghouse employed about 50?
 2 **A Well, it's unclear from the deposition whether**
 3 **or not Bickerstaff is talking about Westinghouse having 50**
 4 **industrial hygienists in 1940 or 50 industrial hygienists**
 5 **when he was manager. See, the deposition was taken in**
 6 **'92, so that's not really clear in this deposition.**
 7 **Q** Okay. That's fine.
 8 **A I would presume they probably had 50 more**
 9 **recently than they did earlier.**
 10 **Q** The next document that you've referred to is
 11 1950, which is 7459.
 12 Is there anything that you draw from this
 13 document other than the fact that Westinghouse, as you've
 14 indicated on here, you conclude Westinghouse manufactured
 15 its own asbestos-containing blankets?
 16 **A Right. And there's a news article that talks**
 17 **about that.**
 18 **You had two pages that talk about that?**
 19 **Q** I don't. I've only got one.
 20 **A No. I just have one, too.**
 21 **Q** And I'm not really sure how legible --
 22 **A It should be only one page. It's not real**
 23 **legible.**
 24 **Q** All right. The 1953 document you've identified
 25 as a Safe Practice Data Sheet printed by Westinghouse.

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1 It's numbered 6984?
 2 **A Right.**
 3 **Q** Is this it (indicating)?
 4 **A Yes.**
 5 **Q** All right. We're on the same page.
 6 **A It's several pages, though, included in there.**
 7 **Q** This is a 1953 document?
 8 **A Yes.**
 9 **Q** Is the statement that is included in your quote
 10 concerning the maximum allowable concentration correct in
 11 your opinion as of 1953?
 12 **A It's what the document stated, yes.**
 13 **Q** And as of 1953, do you agree that the maximum
 14 allowable concentration recognized in the industrial
 15 hygiene community was 5 million particles per cubic foot
 16 of air?
 17 **A That was what was recommended by the ACGIH, and**
 18 **that was the recommendation that they had originally made**
 19 **in 1946 based upon the U. S. Public Health Service**
 20 **Dreessen study of 1938.**
 21 **Q** The next statement: "Where asbestos may be
 22 mixed with other less harmful dusts, the concentration of
 23 asbestos dust will be the controlling factor."
 24 Do you have an opinion as to what that sentence
 25 means?

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1 A Well, it means that if you have smaller amounts
2 of asbestos, that the risk of developing asbestos-related
3 disease would be lower than if you have higher
4 concentrations of asbestos. I think that's what it means.
5 Where asbestos is mixed, that the hazard of the product is
6 determined by the amount of asbestos that is put in, not
7 by the other materials that are in the composition.

8 Q Do you conclude from that that the author of
9 this particular document was suggesting that the maximum
10 allowable concentration could be higher in mixed dust
11 situations than pure asbestos dust situations?

12 A No. I don't read it that way at all. I read
13 it that the author of this document was probably aware of
14 the dose-response relationship of asbestos exposure in the
15 development of disease. That's how I read it. Others may
16 read it differently than that.

17 Q I believe the next page says Gate transcript
18 missing?

19 A Yeah.

20 Q Do you have the full text of the Gate
21 transcript?

22 A Again, at one time I've had this, and there's
23 just a few documents that I've misplaced, and I'm going to
24 have to get back. But I didn't have the full transcript.
25 I just had portions of it.

99

1 Q The quote or the opinion, if we can call it
2 that, that you have following the Gate transcript
3 reference indicates that Mr. Gate was in the marine
4 turbine business?

5 A Right.

6 Q You understand that to be the type of turbine
7 that is used aboard ship?

8 A Yes.

9 Q And do you have any knowledge concerning the
10 condition that turbines were delivered to the shipyard
11 when Westinghouse sold marine turbines? And by that I
12 mean what state of completion.

13 A I don't know the exact state of completion.

14 Q Do you know whether there was any set practice
15 as to who provided the insulation that would have gone on
16 a marine turbine that Westinghouse sold?

17 A I don't know the answer to that.

18 Q Do you have any familiarity with the United
19 States Navy's facility that's known as the NBTL, which I
20 think is National Boiler Turbine Laboratory? Are you
21 familiar with that facility?

22 A No, I'm not.

23 Q Okay. The next reference is to the Peter
24 Strauss deposition. And I think we do have your excerpt
25 there.

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1 A Yes, you do.

2 Q And there's a note that says summary is being
3 completed. So you don't have the summary of the entire
4 deposition; correct?

5 A Right.

6 Q You've got some three or four pages.

7 Do you know who Mr. Strauss was?

8 A He was a service engineer for Westinghouse.

9 Q Do you know what a service engineer does as
10 their day-to-day work?

11 A Well, I presume that the service engineer
12 follows the product to the end user to help them in
13 installing it properly and maintaining it and instructing
14 them how the product is to be used properly.

15 Q Is that assumption based on anything in
16 particular with reference to Westinghouse?

17 A Other than what I'm assuming that a service
18 engineer is a person that Westinghouse would provide to
19 help the purchaser, you know, install and maintain their
20 product.

21 Q Your assumption, I think, you might -- well,
22 let me back up.

23 Would you agree with me that this assumption is
24 just based on your everyday experience rather than a
25 Westinghouse-specific experience?

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1 A Yes.

2 Q Do you know who Russell Senkow is?

3 A He's an employee of Westinghouse.

4 Q Tell me -- and I'm suggesting that you know
5 more than is reflected right here. But do you know any
6 more about Russell Senkow other than his being an employee
7 of Westinghouse and someone who gave this single page of
8 testimony that's attached?

9 A I know nothing more than that.

10 Q And I believe that you've indicated that when
11 you consider deposition testimony in a case, you don't
12 consider it appropriate for you to weigh the credibility
13 of the witness?

14 A I am assuming that what the witness is saying
15 is correct and true and honest because of their doing the
16 deposition under an oath.

17 Q Okay. The next reference is to the Bickerstaff
18 deposition, and it looks like we're missing a couple of
19 pages there.

20 The reference to material data cards, do you
21 know what use would have been made of these referenced
22 material data cards?

23 A Well, it appears from this that the material
24 data cards were provided to the Westinghouse material
25 engineers for their use and that that's as far as they

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1 went. They didn't follow on with the product so that
2 other workers would be able to have advantage that that --
3 those cards were maintained at the level of the material
4 engineers.

5 Q Is it your belief that these material data
6 cards were cards that gave instruction or direction
7 concerning the manufacture of the products?

8 A Well, they contained warnings which I would
9 presume had that information with it.

10 Q So am I correct that your assumption as to
11 these material data cards is that they were essentially
12 the same thing as what we later called material safety
13 data sheets?

14 A Well, they were similar. I don't think they
15 were as comprehensive probably at that time as what are
16 required by OSHA under material safety data sheets at the
17 present time.

18 Q And the reference that we have here is to a
19 1953 safe practice data sheet?

20 A Yes, sir.

21 Q Are you aware of any manufacturer of
22 asbestos-containing material who was in 1953 attaching a
23 warning on his end product?

24 A I don't know the answer to that. I don't know
25 of any.

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1 Q And would you agree with me that throughout the
2 pre-OHSA era anyhow one of the largest consumers of
3 asbestos-containing products was the United States
4 government?

5 A Pre-OSHA?

6 Q Pre-OSHA.

7 A That could be true, but I have no direct
8 evidence to support that.

9 Q Would you agree with me that pre-OSHA the
10 United States government was a significant seller of
11 asbestos?

12 A I don't have direct knowledge to that, but I do
13 know that they did sell asbestos, but I don't know that
14 they were the principal seller of asbestos.

15 Q Not that they were a principal seller but they
16 were a significant seller of asbestos?

17 A They were a seller of asbestos, yes, sir.

18 Q And, in fact, you, of course, had an extensive
19 and distinguished career of government service to the
20 United States government in the occupational health area.
21 Have you become aware of any pre-OHSA warning
22 that the United States government attached to any asbestos
23 that it sold?

24 A No, I have not.

25 MR. ROACH: Can we take a five-minute

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1 break?

2 MR. WEATHERSBY: Certainly.

3 (A brief recess was had.)

4 Q (By Mr. Weathersby) Okay, Doctor. 1962 we've
5 got Westinghouse Document 7468 on your timetable.

6 Are you familiar with the specification process
7 that major industries like steel mills would go through in
8 buying large pieces of equipment like a boiler or a coker
9 or a turbine, how they would come up with what it was they
10 wanted?

11 A I really don't have any expertise in
12 specifications. It's never been a part of my research.
13 About all I know is that there are specifications. Those
14 specifications are drawn up by the company to provide
15 equipment to do the job that they want done. But that's a
16 material engineer's area.

17 Q And really I'm just trying to determine how far
18 into the area you do have familiarity.

19 Are you familiar with the fact that a company
20 the size of a large steel mill normally would have their
21 own in-house engineering people?

22 A Yes.

23 Q And when they would get ready to do an
24 expansion or an addition, they would essentially come up
25 with a description of what they wanted and then put it out

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1 for bids?

2 A That's my impression, yes, sir.

3 Q So your reference to 7468, that would not be
4 intended to preclude the possibility or the probability
5 that the owner of the facility would have the ultimate say
6 in what it was that he bought?

7 A I believe that would be correct.

8 Q Okay.

9 A Under the availability. I mean, it may be that
10 he wants something that's impossible to build.

11 Q Sure. No doubt about that. Really what I was
12 referring to was in terms of only insulation materials
13 approved by Westinghouse would be permitted on
14 Westinghouse turbines and piping.

15 Let me ask it this way: Do you have any facts
16 on which you would draw the conclusion that these
17 insulation materials ultimately approved by Westinghouse
18 wouldn't have in many instances been originally specified
19 by the owner?

20 A The owner being the --

21 Q The purchaser?

22 A -- end purchaser?

23 Q Yes.

24 A No.

25 Q That wouldn't be a process that would surprise

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1 you at any rate?

2 A No.

3 Q The next documents are these ceramic abstracts.
4 I haven't really read that very closely to be honest. Why
5 is that included in this collection?

6 A Just a second. I turned to the wrong page, I
7 think.

8 Q I may be just missing something there.

9 A Well, it's included in the collection because
10 it was obtained to the best of my knowledge from the
11 Westinghouse documents, which would again have indication
12 of what was in the possession of Westinghouse. And the
13 contents talk about the difference between chrysotile,
14 amosite, and crocidolite under the microscope, but it also
15 states that all three of those types are dangerous and
16 that even tremolite and anthophyllite may cause illness.
17 So it ends by saying: "All asbestos dust should be
18 treated as being injurious to the lungs."

19 And since that material was in the possession
20 of Westinghouse, I think it's important to put in the
21 timeline because it's another example of their knowledge
22 at a particular point in time of the hazards associated
23 with asbestos exposure. It doesn't have anything
24 specifically to do with a Westinghouse product.

25 Q And let me ask this: How is it that you

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1 conclude this was in the possession of Westinghouse?

2 A I have to make the presumption since it was
3 provided to me by plaintiffs' attorney.

4 Q As part of the --

5 A As part of the Westinghouse documentation, that
6 they're making that available to me under that assumption
7 that it is.

8 Q And that's the basis for your ultimately
9 concluding that this falls in as a Westinghouse document?

10 A Because it was included in the package they
11 sent me. I did not try and second guess on that issue.

12 Q Okay. That's fine.

13 Now, here's something that I really do have
14 some questions about. These references to the USX
15 Clairton Works or Clairton Works.

16 A Uh-huh.

17 Q Is that included here as relevant to the Lone
18 Star Steel case --

19 A No.

20 Q -- or was that something that was in from the
21 other case?

22 A This is in -- all of these references in this
23 timeline are relevant to the Eisenreich case, and USX is a
24 part of that case. And Westinghouse was involved with
25 them, so that's why that's in there.

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1 Q And so I can assume that if the reference is to
2 the Keystone Project, USX, Clairton Works, that it's
3 related to the Eisenreich case?

4 A You're correct.

5 Q Great. That will move us along a little bit.
6 It moves us up to 1970, I believe.

7 A March 6th?

8 Q Yes, sir.

9 A Is that the page you've got? I have it on page
10 20. Oh, you're talking there.

11 Q I was trying --

12 A I'm sorry. 6990. If you go from where we were
13 at --

14 Q About half an inch?

15 A Yeah.

16 Q Right there (indicating)?

17 A That's it.

18 Q Okay. Document 6990.

19 What do you understand 6990 to be?

20 A It's a memo to J. Welsons from Z. R. Rees.

21 It's talking about corporate standards, and it's talking
22 about -- well, it talks about cards covering. They're
23 talking about data cards, material data cards, covering
24 Micarta, Moldarta, molded composites, et cetera, all of
25 which contain asbestos, and talking about machining can

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1 produce asbestos dust. And it's a label that should be
2 placed produces asbestos dust, do not breathe dust,
3 provide adequate ventilation.

4 And then it refers to a specification, internal
5 company specification, A-20. And then it lists the cards
6 that should be included in the caution.

7 Q In the context of a manufacturing facility or a
8 workplace, if there are industrial hygiene procedures in
9 place and there are dust studies that are taking place
10 such that the occupational medicine authority for that
11 facility is confident that the threshold limit value is
12 not being exceeded prior to 1970, would you say that it
13 would have also have been necessary to notify the worker
14 that a hazardous substance was being used?

15 A Are you saying by 1970 pre-OSHA versus
16 post-OSHA?

17 Q Pre-OSHA.

18 A Well, there was not a requirement except under
19 some of the auspices of the Walsh-Healey Act and the
20 Longshoremen's Act pertaining to asbestos that is.

21 But good public health practice in my opinion
22 would be that any time a worker was working with a known
23 hazardous substance and the company that was employing
24 that worker knew of that substance being hazardous, that
25 communication should be given to the worker even if they

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1 were meeting the current threshold limit value.
 2 And the reason I say that is because they were
 3 following the guidelines but in case there was a breakdown
 4 in control and there was an accident where the threshold
 5 limit value would be exceeded, the worker should know how
 6 toxic the material is so that they could take immediate
 7 precautions to protect themselves. That's why I would
 8 answer it the way I do.

9 Q Are you aware of any published literature --
 10 and I want to do this by decade if we can -- where that
 11 position that you've stated was advocated by an industrial
 12 hygiene authority in the 1940s?

13 A Well, I think that I can -- we can go back
 14 to -- when was it that Hazlett, Dr. Hazlett, what decade
 15 was that? Was that in the '40s; do you remember? I'm
 16 sorry.

17 Here it is. That was 1939. Let me go back to
 18 that exhibit, if I could. That was Exhibit 7398 on '39 --
 19 '46 -- '39. I think if you look at something he wrote --

20 Q Are you looking at 7398 and 7399?

21 A Yes.

22 I saw something when I read this. And I'm
 23 probably not going to be able to find it now, but there
 24 was a statement in here.

25 Q Do you recall whether it was the Southern

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1 of a, for lack of a better term, paternalistic attitude
 2 where the occupational health community seemed to be more
 3 concerned about not upsetting the worker as long as they
 4 feel like they're doing their job in implementing
 5 industrial health procedures?

6 A I think that if you -- I don't advocate you do
 7 this, but if you go back and read the four -- the large
 8 volume of legislative history that led up to the passage
 9 of the Occupational Safety and Health Act that was
 10 principally written in the years '67 through '69, there
 11 are examples in there of why there's a need for the
 12 Occupational Safety and Health Act. And one of the
 13 examples -- some of the examples address the issue that
 14 there needs to be more knowledge imparted from the
 15 industry to the worker. And I'm not referring to
 16 Westinghouse or any particular company at this point but
 17 in general.

18 So I think that during the decades pre-1971
 19 when OSHA really became effective, that there were some
 20 parts of industry in the United States that could be
 21 living under that paternalistic type of attitude, and that
 22 reflected the medical community that was working for that
 23 particular industry. So I don't see that as farfetched,
 24 and I think there is documentation to show that it wasn't
 25 every industry. And I'm not pointing fingers, but it was

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1 Medical Journal?

2 A No. When I read these sometime ago, there was
 3 a statement in one of these where he advocated the
 4 employees being told of what they were working with.

5 MR. ROACH: That was in the IHF digest
 6 report; wasn't it?

7 THE WITNESS: Was it?

8 MR. ROACH: Yeah. I don't think it's in
 9 there. It's about that time, though.

10 A I thought it was in the Hazlett, but I may be
 11 incorrect.

12 But it was about that time frame that it was
 13 recommended that employees be told of what they were
 14 working with. And I know that -- one of the things I do
 15 is I collect old occupational medicine textbooks.

16 Q (By Mr. Weathersby) Yes, sir.

17 A And most of them from the 1930s forward and
 18 even some earlier than that advocate full disclosure to
 19 employees to protect them.

20 And so I don't think what I said in my
 21 statement is very far off from what the mainstream at
 22 least general philosophy was about informing workers so
 23 that they could have some knowledge to protect themselves.

24 Q Would you agree that in the decades prior to
 25 1960, the '40s and '50s anyhow, that there was much more

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1 something that was occurring.

2 Q It's not the kind of thing that would shock you
 3 if you found that type of reference in occupational
 4 literature, occupational health literature, to don't upset
 5 the workers?

6 A Well, I think if you go back just in the
 7 asbestos field alone and you read some of the documents by
 8 investigative reporters and other writers, a good
 9 example -- and I'm not -- if you look at Castleman's book,
 10 he has documented a lot of that type of information that
 11 was known by the medical department within an industry but
 12 was not necessarily given to the rank and file employees
 13 within the industry.

14 Q Okay. Let's go back to where we were. 1970?

15 A March 6, 1970, Exhibit 6990.

16 Q All right. Let's move to 1973, Exhibit 6993.

17 A (Complying.)

18 Q That's sort of a tough read actually.

19 A You can't read that?

20 Q The printing is not very good.

21 A I think if you -- the gist of that is my quote
 22 of the second paragraph of that when we talk about: "We
 23 found excessive ceiling concentrations of asbestos fiber
 24 by a factor of two when the asbestos cloth was torn by
 25 hand."

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1 By ceiling we're talking about the ceiling
2 concentration.
3 Q Do you have an indication as to whether this
4 was in a fabricating facility or somewhere out in the
5 field where the end product is being used, the end
6 Westinghouse product is being used?
7 A **It's when the end product was being used as**
8 implied by the second sentence: "This frequently occurs
9 in an operation when people are removing a section of
10 cloth from a roll of asbestos cloth."
11 So I presume it's after the material has been
12 manufactured.
13 Q The material being the cloth in this situation?
14 A **Right.**
15 Q In this situation the Westinghouse employee
16 being the end user of the cloth?
17 A **That's the way it reads to me.**
18 Q In terms of the use of asbestos cloth as a
19 container for turbine blankets, whether they're filled
20 with one fibrous material or another -- we're talking
21 about the cloth cover to the blanket right now.
22 A **Right.**
23 Q Do you have an understanding as to whether
24 these turbine blankets are covered with a higher grade of
25 cloth than the routine cloth that you can tear with your

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1 hands? Any understanding at all about that?
2 A **I don't know the answer. It appears to me that**
3 **it must be cloth that you can tear with your hand or they**
4 **wouldn't be making that statement in there.**
5 Q In this particular setting?
6 A **Right. I don't know beyond what it says right**
7 **here.**
8 Q And in terms of any asbestos cloth that might
9 or might not be contained on a turbine blanket at the
10 steel facility involved in this case, you wouldn't know
11 whether the asbestos cloth on that type of blanket is
12 something that would be torn by hand or has to be cut?
13 A **I have no direct evidence in this case of that**
14 **material because I haven't seen the material in this case,**
15 **and that's really not something I was asked to look at.**
16 Q And in terms of the turbine blankets that are
17 referenced earlier in your timeline and in the documents
18 that are manufactured by Westinghouse, do you know the
19 expected life of a blanket like that?
20 A **No. I think you asked me that earlier, and I**
21 **think my answer was no.**
22 Q They all start to run together, and I
23 apologize. Okay. Let's move forward then.
24 Document 6999 refers to a Transite material
25 called Marinite. Do you know whether Marinite is used or

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1 is present at all in the Lone Star Steel facility?
2 A **No, I do not.**
3 Q All right. Let's move to '75, Document 7418.
4 A **That's another document that is missing.**
5 Q Okay. Let's see what it says.
6 A **I think we have three that are missing that I'm**
7 **still trying to figure out what I did with them.**
8 Q That's one where we sort of need the context;
9 don't we?
10 A **Right.**
11 **As soon as I come up with it, I mean, I'll**
12 **supplement the deposition and the material I gave you with**
13 **it. I'm trying to locate the missing ones, but I can't do**
14 **anything.**
15 Q Let's talk about OSHA violations for a minute.
16 Would the fact that a company the size of
17 Westinghouse with the number of facilities that
18 Westinghouse has and the number of employees that
19 Westinghouse had -- I guess I should say it in the past
20 tense now -- would the fact that Westinghouse had some
21 limited number of OSHA violations relating to asbestos
22 exposures indicate to you that the industrial hygiene
23 practices and the occupational medicine practices of
24 Westinghouse were substandard?
25 A **I don't think you can make a blanket judgment**

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1 **on that. I think you'd have to look at the individual**
2 **violations to see whether or not they were considered**
3 **egregious violations or whether or not they were**
4 **considered violations that may have just slipped through**
5 **the crack.**
6 **However, any time there was an OSHA violation**
7 **there was some breakdown in the system somewhere that**
8 **allowed that violation to occur. But to talk about**
9 **whether it was a total breakdown in the company industrial**
10 **hygiene program would depend upon looking at the**
11 **individual violations and determining how severe those**
12 **violations were. Sometimes the violations may simply be**
13 **there was a procedure at hand for recordkeeping and the**
14 **employee that was to do the recordkeeping just didn't do**
15 **it. Or it could be that there was an extremely high dust**
16 **exposure that they were aware of and doing nothing about.**
17 **That would be a much more egregious finding.**
18 **So I would have to judge the program based upon**
19 **the individual violations and how they related to the**
20 **overall company program.**
21 Q And in terms of making that assessment, would
22 it be worthwhile information for you to know the frequency
23 of inspections that OSHA conducted?
24 A **Well, I think that I would look at how often**
25 **OSHA came in. As we know from the history of OSHA over**

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1 the last almost 30 years now, that they are very
2 understaffed when it comes to making inspections. They
3 tend to target their inspections to industries that they
4 feel are going to have the more serious problems.

5 I think the issue with OSHA is that it's in
6 hopes that companies will comply with the OSHA standard
7 and put in their own programs. But, yes, frequency is an
8 important thing to look at.

9 Q And so would I be correct in concluding based
10 on what you said that it would take more than limited
11 instances of OSHA violations for you to draw any final
12 conclusion about the diligence of the occupational
13 medicine practice of the company?

14 A I think what I said, it may be limited
15 information, but it would be judged on an individual basis
16 of what those violations were. I mean, if you went in and
17 you only had two violations but they were a total
18 breakdown of the industrial hygiene system and prevention,
19 that would be something as compared to minor violations
20 such as a recordkeeping violation or something of that
21 nature.

22 Q Okay. Let's go to 7457.

23 A (Complying.)

24 Q Does the text that you have extracted there
25 provide you with any information that you can draw any

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1 conclusions about the state of Westinghouse's occupational
2 medicine program as of 3-10-76?

3 A Well, I think what it tells me is that they are
4 aware that asbestos-containing products can pose health
5 hazards and that they are looking at active substitution
6 materials which they've identified that can be used in
7 certain areas in place of asbestos and that they are
8 progressing in trying to eliminate the asbestos hazard.

9 Q So basically what Document 7457 says -- and if
10 I'm not right, tell me. But it appears that this is a
11 Westinghouse memo attempting to move from Level 2 of your
12 industrial hygiene hierarchy to Level 1.

13 A Right.

14 Q In other words, not relying on engineering but
15 going to substitution; is that correct?

16 A Right. And I think that they are basing that,
17 as it says further down in the memo, that the continued
18 use of asbestos products will be prohibitively costly and
19 impractical for a number of different reasons, five
20 different reasons they gave, the last one being employee
21 allegations, Workers' Compensation claims. So the
22 economics of the situation appears to be one factor at
23 least in driving them to this substitution material.

24 Q Good business and common sense in other words?

25 A Right.

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1 Q The next document which is 7016 -- again, each
2 of these appear to be internal documents relating to
3 what's going on inside Westinghouse facilities; is that
4 correct?

5 A That's correct.

6 Q Is there anything in what you've extracted from
7 7016 that reflects anything about awareness of asbestos
8 hazards other than really just common knowledge or was
9 common knowledge by 1976?

10 A I don't believe so. I think it was reflecting
11 their knowledge dating back to Roman times.

12 Q And it's a further reflection, I believe, that
13 Westinghouse is continuing in its effort to find suitable
14 replacements; correct?

15 A Correct.

16 Q Would you agree that even as late as 1976
17 industry was continuing to struggle with identification
18 and development of proper substitutes for some forms of
19 asbestos? Gaskets, for example.

20 A I think that's probably correct.

21 Q Okay. Let's go to 7009, which is the 1-26-76
22 violation.

23 A 1-26-76? Are we going backwards?

24 Q No. I'm at 7009.

25 MR. ROACH: Page 22.

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1 Q (By Mr. Weathersby) 1-12-76. Maybe I read
2 that wrong.

3 A I don't know why that's out of place. Here it
4 is. Got it.

5 Q The letter A below the indented paragraph, does
6 that go with 7009 or with 6998?

7 A I think it goes with 7009. And it's just one
8 comment that was made.

9 If you look at the third page of that document,
10 point A, it says: "Exposure of employees to asbestos
11 should be measured." It's on the third page of the
12 citation. See where I'm pointing (indicating)?

13 Q You know, I think the problem is I've got the
14 wrong document. I have --

15 A Does yours --

16 Q No. I've got the wrong document. Just don't
17 pay any attention to me.

18 A Your document should look like this to begin
19 with (indicating).

20 Q Yeah. I'm looking at the wrong one. I think
21 you're right. I did need the dividers.

22 A I'm going to go back to the copy place -- this
23 is off the record.

24 (Discussion held off the record.)

25 Q (By Mr. Weathersby) 7009 is a citation. And

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1 the last page lists the proposed penalty --

2 A Yes.

3 Q -- at \$95 and the type of violation as
4 nonserious?

5 A Right.

6 Q Would this fall into the category of your
7 earlier opinion that this may well be one of those
8 violations that just happens but isn't a reflection of the
9 overall program?

10 A That's what OSHA would consider as a
11 nonserious, and that would fall into my category.

12 Q You prefer no violations, but --

13 A Of course.

14 Q -- they do have degrees?

15 Okay. The next document is 6998. What
16 conclusions, if any, do you draw from 6998?

17 A Well, you could draw several conclusions. One
18 is that, okay, we're going to have to put a label on our
19 product, and what effect is that going to have on the
20 employees when they see all of a sudden a label coming out
21 that says this product is dangerous.

22 And I think they're looking from a personnel
23 relationship of how they're going to deal with informing
24 the employees in such a manner that it doesn't incur panic
25 for whatever reason.

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1 The thing that kind of bothers me on this is
2 they say at that very end that "Mr. Harrington will delay
3 as long as possible using the labels," indicating we're
4 really being drug into this kicking and screaming and if
5 we weren't required to do it we probably wouldn't do it.
6 That's how I'm reading the document.

7 Q And really to determine the intent of the
8 writer and the impact on the recipient, we need a little
9 more information than we've got here; wouldn't we?

10 A Well, all we have here is the one-page
11 document. But I think any careful reader of this could
12 read what I've just said into it.

13 Q And by the same token would you agree with me
14 that this could be an indication that he's attempting to
15 give the manager as much time as he can to prepare his
16 work force for the disclosure of a warning?

17 A You could read it that way, yes, sir.

18 Q And we don't know based on this whether as long
19 as possible is three days or three months or three years?

20 A You don't know the answer to that.

21 Q And all of those things would be important to
22 really drawing any conclusions concerning intent; wouldn't
23 they?

24 A That's correct.

25 Q All right.

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1 A But I would say that the document speaks pretty
2 much for itself.

3 Q There are a number of different spins that
4 could be put on it?

5 A That's right. Correct.

6 Q On Document 7010, seven-zero-one-zero, without
7 knowing whether the corporation's decision was to
8 discontinue the fireproof or fire-retardant Micarta
9 product --

10 A Right.

11 Q -- you wouldn't know exactly what was involved
12 in the absence of a program to find a substitute; would
13 you?

14 A Correct.

15 Q It might be that they're simply going to
16 discontinue the line?

17 A That could be the case.

18 Q And is there anything further that you would
19 read into 7010 concerning the intent or the attitude of
20 Westinghouse on the subject of asbestos or substitutes?

21 A Let's see what you're reading there.

22 Q (Indicating.)

23 A I'm getting confused now.

24 Q If you start getting confused on those, then we
25 may have a problem.

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1 A No. It was in here, but what was it after on
2 yours?

3 Q It was after 6998.

4 A Okay. Here it is buried down here. I've got
5 it now. Sorry.

6 Q The sentence I'm referring to or I really want
7 to focus you on is the sentence following no program to
8 find a substitute which reads: "If the problem is as
9 urgent as indicated in the attached letter, it would be
10 desirable to establish such a program as soon as
11 possible."

12 Is the January 26th the attached letter as far
13 as you know (indicating)?

14 A Yes.

15 Q So does that statement, "If the problem is as
16 urgent as indicated in the attached letter, it would be
17 desirable to establish such a program as soon as
18 possible," does that tell you anything about the intent or
19 the attitude of the writer?

20 A Well, I think if you look on the last page of
21 that "We must be prepared to begin using a substitute
22 material by July 1, 1976."

23 That refers to the date that the OSHA standard
24 dropped down to 2 fibers. And obviously they were
25 anticipating they weren't going to be able to meet that

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1 and that they were going to have to use something else and
2 it would be to their advantage to make that switch as fast
3 as possible. That's how I read it.

4 Q Are you familiar with the motivating
5 application that resulted in the development of the
6 fire-retardant Micarta?

7 A You mean why it was developed?

8 Q Yes, sir.

9 A I don't know the history of the product.

10 Q Let me represent to you that one of the primary
11 applications of fire-retardant decorative Micarta is
12 aboard ships to prevent smoke and fire from overcoming
13 people aboard ship when the fires go from stateroom to
14 stateroom or from cabin to cabin.

15 Am I correct in assuming that it would be your
16 conclusion that an application such as that would
17 certainly be an application that would have a very high
18 utility?

19 A I think you're weighing one risk to another
20 risk. And that's a very hard ethical question to talk
21 about. It really goes beyond the issue of health and
22 safety because you don't know, first of all, if a fire is
23 ever going to occur in the ship.

24 If you have a situation where a fire never
25 occurs and you put in a material that's going to release

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1 fibers that are going to kill workers from disease, that's
2 one risk. If you have the material put into a ship that
3 does catch on fire and that material saves a group of
4 workers, that's another degree. So it's an ethical issue
5 that one has to weigh.

6 I mean, one of the ways that I would look at it
7 is that if I could find a safer substitute than Micarta
8 containing asbestos, I would certainly put all of my
9 effort into trying to find that safer substitute because I
10 know that that will prevent deaths. I'd also put in a
11 fire-control program to hope that you wouldn't have a fire
12 on the ship. But it's a balancing of risks that's very
13 hard to deal with. But if I have two known risks, one
14 with fiber and one with fire, I'd be looking at ways to
15 prevent both of those, substitution of nonhazardous
16 material for the Micarta and prevention of fire in the
17 first place. Does that --

18 Q That covers my question.

19 And it would be appropriate, would it not, for
20 industry to work together and to rely on governmental
21 entities such as the Coast Guard to make decisions about
22 that ultimate risk utility analysis?

23 A Well, I think certainly governmental agencies
24 play a role in helping make those decisions. One of the
25 problems pre-OSHA act was at least in the industry there

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1 wasn't that well-developed mechanism for doing so, that I
2 think government does have a role in that along with the
3 employer and the industry that's using the product and
4 maintaining the material.

5 Q All right. Let's move forward.

6 I guess the only thing that I wanted to ask you
7 about in Document 26299, which I need to mark -- is this
8 the correct document (indicating)?

9 A Well -- (pause).

10 Q Bottom of page 22.

11 A I think it's the wrong document. I don't think
12 that's the right document.

13 Q You may be right.

14 A I think that's out of place in here, and I
15 don't know where it's at. It's the OSHA citation.

16 Q Okay.

17 A Oh, it's in the Bates --

18 Q It is. It's in the Bates stamp. And I've got
19 the right one. I just found it myself.

20 There's reference at the bottom of your extract
21 there to the engineering department seeking permission
22 from NES --

23 A Right.

24 Q -- to use a nonasbestos insulating material on
25 these units. Who is NES, if you know?

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1 A What page is that on? The first one?

2 Q It's on the second page, the next-to-the-last
3 paragraph.

4 A I don't know who NES is.

5 Q Okay. That's fine.

6 All right. Let's move forward to Document
7 7023. And I believe this document has to do with some
8 Workers' Compensation claims that were filed?

9 A Yes.

10 Q 1978 being the date?

11 A Yes.

12 Q We talked earlier about how the filing of a
13 Workers' Compensation claim doesn't necessarily mean that
14 there is a then-existing problem in the industrial hygiene
15 practices; correct?

16 A Well, any time you have a breakdown there's
17 some problem. Whether it is a catastrophic problem
18 compared to one that can be easily corrected, I can't
19 answer you.

20 Q Actually the question I was asking here was the
21 fact that in 1978 there were claims filed for
22 asbestos-related disease, that in itself doesn't
23 necessarily mean that as of 1978 when the claims were
24 filed that Westinghouse was anything other than in
25 compliance?

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1 A Well, as I stated earlier, when you're talking
2 about asbestos-related disease, these are latency
3 conditions, and you have to look at the individual
4 situation to see when they were exposed, when the disease
5 occurred, when the claim was filed.
6 Q And we don't have that information here?
7 A And we don't have that. And it could reflect
8 past -- but it also would be a good time to examine.
9 I think what this document says is we're
10 getting these claims but we better examine our program as
11 we have it right now to make sure we are in compliance.
12 Q There's a statement made, and I'll ask it and
13 see how you respond to it. The statement is made:
14 "Asbestos was considered relatively safe until the early
15 '70s."
16 Would you agree or disagree with that statement
17 in the context of this letter?
18 A Well, I totally disagree with that, because I
19 think that we did have knowledge dating back to the 1930s
20 that asbestos was an extremely hazardous respiratory toxin
21 and that that data just evolved immensely after 1930
22 indicating other diseases. So I think this is a feeling
23 that many people had, and I've heard it in most of the
24 litigation that I've dealt with, but I don't agree that we
25 didn't have the knowledge pre-1970.

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1 Q You used a word that sort of caught my ear
2 there referring to asbestos as a toxin.
3 A Right.
4 Q Under the definition that existed for a toxic
5 material, would asbestos have been classified as a toxic
6 material in the 1940s?
7 A Well, there's some I guess confusion as to how
8 the word "toxic material" is defined. In my mind, toxic
9 material is anything that causes a toxic reaction or a
10 poisonous reaction. So I classify it as a toxin. But,
11 you know, would have to go back to the dictionary
12 definition to really -- and that's beyond the science
13 really. My opinion is that it is a toxic substance.
14 Q You lead me to another point.
15 In terms of how you go about defining things
16 like toxin, where would you look? What dictionary would
17 you go to in your field?
18 A Well, first of all, I'd go to the Webster's
19 dictionary and see what it has to say. And there are
20 chemical dictionaries. There are medical dictionaries.
21 Q Are there particular medical dictionaries that
22 you would rely on?
23 A You mean any brand name?
24 Q Any brand names is what I'm referring to.
25 Stedman's?

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1 A Well, the one that comes to mind is the one
2 that I used through graduate school was Stedman's. Then
3 there's other documents and textbooks out there on
4 toxicology that make their own definition.
5 Q Stedman's would be a reasonable good general
6 category?
7 A Yeah.
8 Q How about for epidemiology, is there a
9 particular brand that you rely on or prefer?
10 A A brand of medical dictionary?
11 Q A brand of dictionary for epidemiology.
12 A I have Stedman's by my desk, and that's what I
13 use. I do have other documents that are like the chemical
14 index, the Merck Chemical Index and things of that nature
15 that I also have by my desk that I use. There are a
16 variety of textbooks also. I think Casserett and Doull
17 and others serve that purpose, Hamilton and Hardy, Proctor
18 and Hughes, et cetera.
19 Q Okay. Let's go to the next step down.
20 Let's go down to that February 13, 1979,
21 document. And help me make sure that I'm on the right
22 page here.
23 A Got it?
24 Q Yes.
25 What does this letter contribute to your

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1 opinions that are offered relevant to Westinghouse?
2 A Well, my opinion is that the senior buyer
3 noticed that an order was placed for 35 pounds of
4 asbestos. And in 1979 that was not a good thing to do and
5 that that should be the last time that such a purchase is
6 made and that we should completely switch to the
7 substitute material because the handling equipment allows
8 them to do so. And so I take it that that's what this
9 means to me is that this slipped through the system
10 somehow.
11 Q Do you read into that that Westinghouse is
12 making an effort to stay away from the use of any asbestos
13 material in their practices in order to avoid problems
14 with OSHA?
15 A Well, it reads to me that if they keep
16 purchasing it, that the government agencies are going to
17 be able to track it. And if the government agencies track
18 it and find they're using it, that it could cause problems
19 with whatever governmental agency, and I presume in this
20 case they're talking about OSHA.
21 Q Would the problem be increased surveillance?
22 A It could mean increased surveillance. It could
23 mean increased inspection. It could mean a lot of
24 different things.
25 Q As of 1979, it wouldn't have been an illegal

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1 act for them to have been purchasing 35 pounds of asbestos
 2 powder; would it?
 3 **A That's correct.**
 4 **Q** So it would be a reasonable construction of the
 5 letter to read it as we don't want to be associated with
 6 it because we don't want to be on a watch list?
 7 **A That's one interpretation, yes.**
 8 **Q** Is there anything that you read in this letter
 9 that you would interpret as being an indication of any
 10 improper behavior on the part of Westinghouse?
 11 **A No.**
 12 **Q** You having been inside the government
 13 occupational health network, do you know whether OSHA or
 14 one of the related agencies kept a higher surveillance
 15 list based on industries that used asbestos?
 16 **A I don't know the answer to that.**
 17 **(Whereupon, there was an interruption in the**
 18 **proceedings.)**
 19 **A I can't give -- no. I really don't know the**
 20 **answer.**
 21 **MR. WEATHERSBY:** Let's go off the record a
 22 second.
 23 **(A brief recess was had.)**
 24 **Q (By Mr. Weathersby)** Dr. Lemen, I want to ask
 25 you some questions -- we're now skipping to the workplace.

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1 And based on what you said earlier, I think that most of
 2 these are going to be no information yet kind of
 3 questions. But if they're not, you know, let me know.
 4 First of all, what do you know about the
 5 workplace involved in this case, that being Lone Star
 6 Steel?
 7 **A Well, I have not visited the workplace. My**
 8 **only knowledge of the workplace is in discussions I've had**
 9 **with Mr. Roach.**
 10 **Q** Do you know the size of the facility?
 11 **A I really have no idea.**
 12 **Q** All right. Anything about the number of
 13 employees that were employed there at any given time in
 14 past history?
 15 **A Not really.**
 16 **Q** Do you know anything about the economic size,
 17 that is, in the production capacity of the company?
 18 **A I just know that it's a large steel company,**
 19 **but I can't quantify any information for you.**
 20 **Q** Do you know anything about Lone Star Steel's
 21 internal industrial hygiene program?
 22 **A No.**
 23 **Q** What about anything to do with their knowledge
 24 of industrial hygiene practices throughout the history of
 25 the company?

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1 **A No.**
 2 **Q** In other words, the thing that we refer to in
 3 this business as the state of the art as to hazards
 4 associated with asbestos, you don't have any information
 5 concerning Lone Star Steel's knowledge of the state of the
 6 art?
 7 **A Not specifically.**
 8 **Q** Do you know whether Lone Star Steel was a union
 9 operation?
 10 **A It's my understanding that there are unions**
 11 **representing certain groups of employees.**
 12 **Q** Do you know which unions were involved?
 13 **A I'm not sure. I know you've mentioned some of**
 14 **the unions, and I can't remember right now. But the**
 15 **steelworkers, I believe, which are still the steelworkers.**
 16 **I can't remember if OCAW was involved or not down there.**
 17 **The steelworkers is the one that I know of.**
 18 **Q** So do you know at what point in time the
 19 facility became affiliated with a national union?
 20 **A No, I don't.**
 21 **Q** Do you know anything about the Workers'
 22 Compensation insurance arrangements at Lone Star Steel?
 23 **A No, I don't.**
 24 **Q** And by that I mean whether they were
 25 self-insured or had an insurer or what?

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1 **A I don't know.**
 2 **Q** So I assume you also wouldn't know whether
 3 their Workers' Compensation insurer was also a provider of
 4 industrial hygiene services?
 5 **A I don't recall.**
 6 **Q** As relates to the plaintiffs in the next trial
 7 setting, which is sometime late fall '99, have you
 8 received any information on these particular plaintiffs?
 9 **THE WITNESS:** I don't think you've sent me
 10 anything plaintiff-specific.
 11 **MR. ROACH:** No.
 12 **Q (By Mr. Weathersby)** All right. No
 13 plaintiff-specific information then?
 14 **A Correct.**
 15 **Q** Do you know --
 16 **A I have in previous -- I guess I should qualify**
 17 **that. I have plaintiff-specific information in previous**
 18 **parts of this case but not pertinent to this part of the**
 19 **case.**
 20 **MR. WEATHERSBY:** Is that correct, Nelson?
 21 **MR. ROACH:** That's correct. Uh-huh.
 22 **MR. WEATHERSBY:** Okay. Good.
 23 **Q (By Mr. Weathersby)** Do you know what, if any,
 24 Westinghouse products are at issue in this case at Lone
 25 Star Steel?

138 1 A Not specifically, no. 2 Q And I suppose, for example, to the extent there 3 are people saying that they worked around a Westinghouse 4 turbine at Lone Star Steel, you wouldn't know anything 5 about the details of that turbine, where it came from, or 6 what kind it was or anything like that? 7 A No, I don't. 8 Q Are you familiar with the Texas enactment of 9 the threshold limit value? 10 A You mean when they adopted it in 1958? 11 Q When they adopted it in 1958. 12 A Yes. I have a copy of that, but I didn't bring 13 it to this deposition. 14 Q And that was a 5 million particle limit at that 15 point in time; correct? 16 A That's correct. 17 Q In looking through your CV, I noticed that you 18 had reference to some presentations that you have done 19 over the years. And among those -- I'll find a page for 20 you in just a minute, 21 A Probably starting on page 13. 22 Q Selected Papers Presented, which is actually 23 page 1, I think. 24 A Yeah. But I think what you're looking for is 25 on page 13.	140 1 And if you have them, I'd love to get a copy. 2 THE WITNESS: I don't know how yours is 3 dated. 4 MR. WEATHERSBY: Mine is 4-9. 5 THE WITNESS: This is 6-9. I thought I 6 had given you the latest one. 7 MR. ROACH: Oh, I know. It's because my 8 secretary made a copy. That's my copy from the 9 office. 10 THE WITNESS: It should have the same 11 things on it because it hasn't been that much 12 updated, but it's different pages. 13 MR. WEATHERSBY: These are all old papers. 14 Q (By Mr. Weathersby) The first one I'm 15 interested in under Selected Papers Presented is 16 Cancer-Related Problems in the Metals Industry. 17 A Okay. 18 Q And the next one is that -- I guess either one 19 or both of these, BCME? 20 A Bischloromethyl ether? 21 Q Right. At the bottom of the page, the 22 Cytologic Operations and Cancer Incidence. It's two steps 23 below your cancer-related article. 24 A Oh, yeah. I got that. 25 Could I just ask out of curiosity why you're
139 1 Q No. The first one is on page 12, 2 Cancer-Related Problems in the Metals Industry. 3 A Right. 4 Q Is that a paper that you would still have or 5 that could be located? 6 A Well, I have a file that has selected ones of 7 my presentations. I can certainly look and see if it's 8 there if you want me to. Is this an exhibit that's been 9 marked? 10 Q Yes, it is. I'll tell you, I'll write them 11 down and get them. 12 A I can get them and then I can provide them to 13 Mr. Roach and then he can provide them. Is that fair? 14 Q That would be fine. It sure would. 15 A If I have them. I'm not promising you that 16 I've got them. 17 Q There's several in here that I would be 18 interested in having you check on, if you could do that. 19 A Okay. What's the next one? 20 Q Okay. 21 MR. WEATHERSBY: You know, I was thinking 22 I had another copy of this somewhere. 23 MR. ROACH: I have it here. 24 MR. WEATHERSBY: Yeah. If we could just 25 check off which, if any of these, you have.	141 1 interested in that? 2 Q I'm looking for other toxic substances that 3 you've done papers on. 4 A Oh, okay. 5 Those actually developed into a publication 6 which is contained back here. 7 Q Oh, is that right? 8 A Can I give you the publication? 9 Q That would help. In other words, tell me the 10 publication and then you can tell me whether the papers 11 are included. 12 A Okay. The publication on that one is Lemen, 13 Johnson, Wagoner, Archer, Saccomanno: Cytologic 14 Observations and Cancer Incidence Following Exposure to 15 BCME. It's in the Annals of the New York Academy of 16 Sciences, 1976. I'll just mark it off here and send it to 17 you. It's under Selected Publications. 18 Q I see it. I see it now. Outstanding. 19 A So while I may not have the speech, I can 20 certainly give you the -- 21 Q That would be fine. And I see the cadmium 22 article immediately below that. 23 A So you want cadmium, too? 24 Q Yes, sir. 25 A There's actually three publications on cadmium

142 1 because we've updated the cohort three times. 2 Q And immediately below that is the Lloyd and 3 Lemen article on Cancer Hazards in Steel. 4 A Right. That's a proceedings from a conference, 5 and I'm pretty sure I have that one. 6 Q Okay. If you have it, I'd love to have it. 7 Have you been called upon to offer assistance 8 or consultation, testimony, in any cases involving as your 9 next article there refers to asbestos in dentistry? 10 A No. I just -- we wrote that article. Infante 11 is a dentist. And he and I were working together at one 12 point in time, and we put together what we knew about 13 asbestos use in dentistry as an article. 14 Q The other article that I would like to see, if 15 you could help me with that, is over on the next page: 16 Silica, Silicosis, and Cancer, Cancer Research Monographs, 17 over on page 22, I think it is. 18 A Am I the first author of that one? 19 Q Yes, sir. Lemen, Dunnom, and Wagner. 20 A That's a book chapter, I think, if I can find 21 the thing. 22 Q Okay. Obviously if you can't find them it's -- 23 A No. I mean I can't find it on here to mark it. 24 I know I got the book chapter. 25 Q It is on here two slots up in your list from	144 1 listed is one entitled Cancer-Related Problems in the 2 Metals Industry: An Epidemiological Overview. It's a 3 1977 presentation. 4 A Right. 5 Q Do you know by chance if you would have the 6 paper involved in that? 7 A I don't know. I'll have to look. 8 Q If you'd check on that, that would be 9 outstanding. 10 A I tried to keep most of my presentations, but 11 some slipped through. I didn't -- 12 Q You've done several, so that's understandable. 13 Are there other companies that you have done 14 revised timelines for other than Westinghouse? And by 15 that I mean your timeline with the relevant documents 16 adjusted to the particular company. 17 A I've done it in individual plaintiffs by 18 inserting their work histories and so forth on several 19 occasions. And I've done it for USX, United States Steel, 20 in the Eisenreich case. I can't think of any other 21 companies that I've done it for. 22 Q Do you have a copy of the U. S. Steel relevant 23 timeline that you've done? 24 A Yes. 25 Q Okay. I would request a copy of that.
143 1 the bottom. 2 A Okay. Then it's over here. Here, I got it. 3 Q It's actually not two slots up. It's a lot 4 further in than that. 5 The next document that I had an interest in, if 6 you've got it, is the NIOSH 1985 criteria document for 7 Recommended Standard in Foundries. 8 A I don't think I personally have a copy, but it 9 would be in the NIOSH. I can call them and ask them to 10 send me one. 11 Q I can -- 12 A Or you can get that. 13 Q I can get that. 14 A If you want to just call the NIOSH 1-800 15 number -- 16 MR. ROACH: I think the foundry document 17 is on the web. 18 A It should be. If you go to the NIOSH home 19 page, I think all the documents are on the web. 20 MR. ROACH: Not all of them, but I think 21 the foundry document is on the web, I believe. 22 A I do have it on a CD-ROM in my office. 23 Q (By Mr. Weathersby) If I can't find it, I'll 24 get back to you. Okay? Otherwise I'll deal with it. 25 Among the papers or the presentations that are	145 1 MR. TIERNEY: Back to that document, if 2 that document is an Eisenreich document, we 3 would instruct the doctor not to turn that over 4 until you have that issue placed before the -- 5 THE WITNESS: That is an Eisenreich 6 document, so I'll await instructions from 7 whoever. 8 MR. WEATHERSBY: I will consult with Texas 9 counsel and find out how they want to handle it 10 and let them and Mr. Tierney get a hearing with 11 the judge. 12 MR. TIERNEY: Yeah. Do you have my 13 address so you can serve me with any motion? 14 MR. WEATHERSBY: I won't be filing any. 15 If there's any filed, it will be filed by 16 Jenkins & Gilchrist, and I'm sure they can get 17 your address. I'll tell them who you are. 18 MR. TIERNEY: Okay. 19 Q (By Mr. Weathersby) Doctor, have you done any 20 study of the organizations, industry affiliations and that 21 sort of thing within the steelmaking industry in the 22 United States? 23 A You mean like a trade organization? 24 Q Yes, sir. 25 A I haven't done any personal studies of any. If

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1 you could give me an examination of like -- I have -- oh,
2 as relates to steel. I guess what you're talking about, I
3 have done an evaluation of, say, like the Chemical
4 Manufacturers Association and how they relate to vinyl
5 chloride.

6 Q That type of thing, American Iron and Steel
7 Institute.

8 A I have not done anything with them.

9 Q Have you any familiarity with the steel mills
10 that comprise the American steelmaking industry?

11 A I don't have a list or knowledge of which ones
12 are members.

13 Q Are there major players within the steelmaking
14 industry and have there been through the years that you
15 would expect a steel mill such as Lone Star Steel to look
16 to for their standards in production and --

17 A Well, I know that United States Steel or USX
18 from the time that I came with the federal government and
19 was with NIOSH we had a fairly close relationship with
20 Dr. Merrill Bundy, who was the medical director of USX,
21 and he participated in a lot of NIOSH committees, and I
22 knew him through that general way. I don't know if I knew
23 many of the other steel medical people.

24 We also had a relationship with the United
25 Steelworkers Union. And one of my mentors in NIOSH,

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1 Dr. Bill Lloyd, had done a series of epidemiological
2 studies with Carol Redmond of the -- in Pittsburgh, and so
3 I was familiar with those studies and actually, as you
4 saw, published some things with Dr. Lloyd.

5 Q Have you any familiarity with the periodicals
6 that are written and read within the steelmaking industry
7 in the United States?

8 A Written and read?

9 Q The type of thing like the Industrial
10 Hygiene --

11 A Oh, written and read?

12 Q Yes, sir.

13 A Not "written in red."

14 MR. WITTIE: That's what I thought you
15 said, too.

16 MR. GUSTAFSON: That's what he did say. I
17 don't know a magazine that's got red type.

18 THE WITNESS: I'm not trying to be funny,
19 but that's the way it came out.

20 Q (By Mr. Weathersby) I understand. Go ahead.

21 A I'm familiar with the United States
22 Steelworkers Union's internal magazines and I've seen
23 trade associations, steelworkers magazines. I've not
24 regularly read those or subscribed to those, but I've seen
25 some of those.

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1 Q So you have not investigated the level or
2 extent of knowledge that those publications reflect on
3 state of the art of hazards associated with asbestos?

4 A Well, I think if you look at the -- if there's
5 some decision for me to release the timeline, you may see
6 some reference to selected numbers of those in the
7 timeline.

8 Q Okay. Is there anything in the timeline that
9 you have provided for us as Exhibit 1 --

10 A Here it is.

11 Q I'm looking for my copy, which I've, of course,
12 lost.

13 -- that you believe indicates knowledge that
14 Westinghouse should have had or did have at a particular
15 time? Is there anything there that you believe would have
16 been unavailable to the steelmaking industry at the same
17 time?

18 A Well, of course the internal documents that
19 Westinghouse had would not have been made available to the
20 steel industry, but the general knowledge that is imparted
21 in the IHF and the general medical literature should have
22 been available similarly to the steel industry as it was
23 to Westinghouse.

24 Q It certainly would have been equally available;
25 would you agree?

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1 A Yes.

2 Q And how about in terms of information available
3 to the unions that were affiliated with the steelworkers
4 at the same time, would they have likewise had access to
5 the information that was being disseminated by the
6 Industrial Hygiene Foundation?

7 A I don't think they would have had the same
8 information as being disseminated by the Industrial
9 Hygiene Foundation. I'm not completely clear when the
10 labor unions first started representing steelworkers, when
11 they developed a health and safety program.

12 I do know that my knowledge dating back to the
13 early '70s would indicate that the steelworkers union has
14 had a strong health and safety program and presence and
15 has worked closely with the steel industry in sharing
16 information, but I can't go pre that because I don't have
17 that now.

18 Q You have not investigated that issue?

19 A No.

20 Q And I assume, likewise, you probably are not
21 familiar with the historical affiliation of the
22 steelworkers unions with either the AFL or the CIO before
23 those organizations merged?

24 A Well, not off the top of my head. I do have
25 some historical documents that don't relate to this case

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1 and were not collected for this case that deal with the
2 history of the trade -- the labor -- I mean, not the trade
3 but the labor movement in the United States that deal with
4 the AFL and the CIO before they merged and have some
5 biographies of people like Samuel Coppers and others that
6 were kingpins in the labor movement that have that
7 history. But I haven't gone back to that recently to pull
8 any of that out for this case.

9 Q Would it be your opinion that the merged
10 AFL-CIO provides an organization for unions similar to
11 what is provided to industry by organizations such as the
12 Industrial Hygiene Foundation or other industry-related
13 organizations?

14 A Again, I can't tell you without going back to
15 the references when that began, but from the entire time
16 that I have been in the federal government, that being
17 1970 forward, the AFL-CIO has had a health and safety
18 department with personnel in that department which have
19 imparted information on health and safety to member unions
20 of the AFL-CIO. And I personally was employed after I
21 retired from the U. S. government for two years by the
22 Building and Construction Trades Department of the AFL-CIO
23 in the 15 different unions representing construction
24 workers.

25 MR. WEATHERSBY: Tell you what. Can we

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1 take about five minutes? I'm kind of at a
2 turning point that I need to decide what I've
3 got left to do here. I think the good news is
4 we're kind of coming to a halt and close.

5 MR. ROACH: Sure.
6 (A brief recess was had.)
7 (Defendants' Exhibit No. 59 marked for
8 identification.)

9 Q (By Mr. Weathersby) Dr. Lemen, I've got the
10 Survey of Asbestiform Minerals that you had prepared, the
11 one page that I understand is the sole page of addition to
12 your last production of timeline notebook; is that
13 correct?

14 A That's correct.

15 Q And we've marked it Defendants' Exhibit 59,
16 Lemen, in this case; right?

17 A That's correct.

18 Q The only question that I guess I'll ask you
19 about this is is it a correct characterization of these
20 asbestiform minerals that each of the eight that you have
21 listed with different nonasbestiform occurrence
22 constituent elements there, each of these are actually
23 mineralogically distinct and different materials; aren't
24 they?

25 A They were. The serpentine family has one

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1 asbestiform fiber type that's of commercial use, that
2 being chrysotile. Then the amphibole family has six
3 basically of commercial use. And they do have different
4 chemical formulas, and so, therefore, they are
5 mineralogically different.

6 Q And at least as between the serpentine and the
7 amphiboles, they're shaped differently?

8 A Yes.

9 Q And they behave differently when confronted
10 with moving air currents?

11 A Yes.

12 Q And to refer to asbestos as all the same stuff,
13 they're at least different to that extent; right?

14 A They're different chemically.

15 Q Chemically?

16 A But they're all in the same general terminology
17 of asbestos.

18 Q They're different chemically and in terms of
19 shape or I guess you could say morphology?

20 A Correct. Morphology is a good word.

21 Q All right. I don't want to get too far down
22 this path, but did you know Lester and Lewis Crawley?

23 A I know Lewis Crawley quite well. He was my
24 first -- well, actually he hired me into the Public Health
25 Service. And I have kept in contact with him and still do

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1 correspond with him from time to time.

2 Q Is he still in life?

3 A Yes. He lives in Cincinnati.

4 Q Oh, I didn't realize that. I guess his twin
5 was the one who had died.

6 A No. They're both alive. Because someone was
7 trying to get ahold of him, and they said, "Oh, we'll call
8 him. We think he's in California." And they got his
9 brother Lester. And they said, "We thought you were
10 dead." And he said, "No, I'm still alive."

11 Q In other words, the reports have been
12 exaggerated?

13 A They're both probably in their 80s at this
14 point in time, but they're both alive.

15 Q Is it correct that one or both of those two
16 gentlemen were adherents at one time to the theory that it
17 was the metal content in asbestos that was actually the
18 problem?

19 A I don't know about Lester Crawley, but I know
20 when I first came to the Public Health Service Dr. Lewis
21 Crawley was working on the issue of metal content and its
22 reflection into the carcinogenicity of the fibers. I
23 don't know if he holds that belief today, but I know that
24 he was doing research in that general area back in 1970
25 when I came to work.

154 1 Q At least as of that time he considered that to 2 be a viable hypothesis? 3 A To the best of my knowledge, that's what he 4 thought. I can't really speak for him, but that was my 5 understanding. 6 Q And he was certainly a competent and respected 7 professional in his field; was he not? 8 A Yes. But I don't know what his thoughts are 9 today. I don't know if he really believed that as the 10 only mechanism back then either. 11 Q Now, I went down that path and I sort of lost 12 where I was going. Bear with me just a second. 13 (Discussion held off the record.) 14 Q (By Mr. Weathersby) Steel mill epidemiological 15 studies. Are there steel mill epidemiological studies 16 that you would rely on in drawing conclusions as to the 17 risk of lung cancer in the steelmaking industry? 18 A I probably would say that the most reliable and 19 probably the classic studies, epidemiologic studies, were 20 those performed by Carol Redmond and Bill Lloyd at the 21 University of Pittsburgh. And those still stand out. I 22 think there are four or five in the series as probably 23 some of the best studies that have ever been done 24 epidemiologically, one of the steel mills, but also in 25 developing the methodology that was use as retrospective	156 1 briefly about epidemiology. I don't want to go into a lot 2 of detail about that, but would you agree with me that in 3 considering the significance of a finding of risk in a 4 cohort study that the applicability of the study is 5 directly related to the particular job function or area in 6 the plant that a steel worker would be engaged in? 7 A If I understand your question, you're saying 8 the results of the study would be related to the job or 9 the geographical location? 10 Q Let me back up. 11 Would conclusions that are reached in a study 12 concerning steel mill office workers necessarily be a 13 valid study to rely on in drawing conclusions of risk 14 related to a coke oven worker? 15 A No. 16 Q So the location within the facility where the 17 work takes place is an important factor? 18 A Yes. 19 Q Would duration of work be of importance in 20 assessing the conclusions that are reached as relates to 21 carcinogenicity? 22 A Yes. 23 Q Would the time or the opportunity for latency, 24 the maturing process of the underlying disease, would that 25 be an important consideration in weighing the validity of
155 1 cohort analysis in occupational health studies. 2 Q Those were the ones entitled long-term 3 mortality study of steelworkers? 4 A Yes. 5 Q And published in the Journal of Occupational 6 Medicine? 7 A That's correct. 8 Q And at least from your vantage point if you 9 were looking for a more or less definitive work as to how 10 to do it and so forth, that series would be where you 11 would go? 12 A I'd start there. 13 Q Are there others apart from those that you 14 would rely on? 15 A Well, there are other studies of the steel 16 industry. I haven't recently done a literature search in 17 looking at those, but I would start with the Redmond/Lloyd 18 series of papers and move forward. 19 Q That's not something that you have analyzed in 20 preparation for your testimony today? 21 A No. Because they didn't deal specifically with 22 asbestos exposure. 23 MR. WEATHERSBY: Off the record. 24 (Discussion held off the record.) 25 Q (By Mr. Weathersby) Okay. Let's talk very	157 1 a study to a particular cohort? 2 A Yes. 3 Q Are you aware of any cohort studies that have 4 been done in the steel industry -- and I don't want to put 5 you in the position of answering questions you aren't 6 prepared to answer today. I understand that. I'm not 7 trying to catch you off guard. But are you aware as we 8 sit here today of any cohort studies that have been done 9 of steelworkers in which the controls considered smoking 10 as an issue in relation to incidence of lung cancer? 11 A I'd have to go back to the literature and look 12 at that. 13 Q Certainly smoking is an important consideration 14 in a study involving lung cancer; is it not? 15 A Yes. 16 Q I've got questions about various biases and 17 control issues, but I think we would really do best to ask 18 those in the context of a study rather than in the 19 abstract. 20 Let's see if I can ask one fell swoop question 21 about these documents that are not included in your 22 timeline that I haven't already asked. And I'm referring 23 to the documents numbered 5 through 58. 24 Do you have any opinions that you have reached 25 after reviewing these documents that you would consider to

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1 be of importance as to the issue of, for lack of a better
2 term, improper or bad acts of Westinghouse with regard to
3 its involvement in the asbestos industry?

4 **A I don't think so. One of those documents, 57,**
5 **was my CV, so I don't think --**

6 Q That didn't have a lot to do with that; did
7 they?

8 And 58's your bill to Nix Patterson; right?

9 **A Right.**

10 Q I don't think they can be blamed for that.

11 MR. WEATHERSBY: Dr. Lemen, I believe I'm
12 at the point where I may have a couple of
13 scattered finishing up questions.

14 But are either of these other gentlemen
15 going to have questions? If they do, have at
16 it.

17 MR. GUSTAFSON: I have a few topics.

18 MR. WEATHERSBY: Go ahead and ask, and
19 I'll be going through these things so that I
20 may not have to delay anybody any further
21 because I really think I'm about through.

22 CROSS-EXAMINATION

23 BY MR. GUSTAFSON:

24 Q Dr. Lemen, my name is Ivan Gustafson. I'm here
25 for Pittsburgh Corning today.

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1 You have issued a report concerning Pittsburgh
2 Corning Corporation for this group of cases; haven't you?

3 **A The two-page report?**

4 Q Yes.

5 **A Yes, sir.**

6 Q Do you see that report as simply an attempt to
7 set out in two pages the opinions on Pittsburgh Corning
8 that you have previously given, or is this in your opinion
9 an extension or some expression of new or different
10 opinions that you have not yet --

11 **A Well, I think if you -- I'm sure you've read**
12 **it.**

13 Q I have.

14 **A I don't think it reflects any opinions that I**
15 **have not already expressed concerning Pittsburgh Corning.**
16 **It's basically a chronology of my activities starting in**
17 **the '70s with Pittsburgh Corning Corporation.**

18 Q With respect to the documents that you cite as
19 attachments to this report -- and there were I think five.
20 Actually eight. I'm sorry -- none of those are things
21 that were new to you for this report; were they?

22 **A No. I think all of those have been shared with**
23 **you before. If they haven't, I would be surprised.**

24 Q They're all very familiar to me.

25 **A Okay.**

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1 Q Whether we have talked about them with you or
2 not.

3 Did you receive any additional documents
4 relevant to Pittsburgh Corning Corporation for these
5 cases?

6 **A No.**

7 Q Did you bring with you a copy of this just
8 slightly over two-page report by any chance?

9 **A Actually I was supposed to, and it's an**
10 **oversight. I'll be happy to amend my deposition with it.**
11 **I knew it had been furnished in the material, and**
12 **Mr. Roach had asked me to bring it. And I'll be quite**
13 **honest, I didn't. But it was my fault, not any other -- I**
14 **was going to mention that before we closed the deposition**
15 **anyhow.**

16 MR. GUSTAFSON: I just wanted to attach it
17 so we'll know historically what it says. If
18 you've got a copy. We don't need the
19 attachments.

20 MR. ROACH: Just the report?

21 MR. GUSTAFSON: Just the report.

22 All right. We'll attach that as Exhibit

23 60.

24 (Discussion held off the record.)

25 (Defendants' Exhibit No. 60 marked for

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1 identification.)

2 Q (By Mr. Gustafson) With respect to the
3 documents that you've produced that consist of abstracts
4 from the Industrial Health Foundation, how do you view
5 that organization in the development of knowledge
6 regarding industrial hygiene?

7 **A I think it's been an important organization for**
8 **developing the knowledge. Sometimes that organization has**
9 **not really released the material on a timely basis, but**
10 **the historical perspective now looking backward towards**
11 **that organization is that there was a lot of information**
12 **contained there concerning industrial hygiene progression**
13 **from the '30s to the present time.**

14 Q There are those who view the -- I'm going to
15 use the abbreviation IHF for the Industrial Health
16 Foundation -- who view that organization as on the whole a
17 organization which was a front for industry and on the
18 whole not a positive influence on the development of
19 knowledge regarding industrial hygiene and industrial
20 hazards.

21 Do you agree with that view or disagree with
22 that?

23 **A I have some concerns, as I said previously,**
24 **that there were developments that the IHF knew about that**
25 **were not made public on a timely basis which others that**

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1 were not members of the IHF could have used -- and I think
2 I've written about this in papers that I've written --
3 that would have changed possibly the way we approached
4 asbestos and other dust and other fibers or
5 pneumoconiosis. That may have made a difference in the
6 earlier prevention of disease than what we have seen as a
7 historical fact to have occurred.

8 Q Do you agree or disagree with those who claim
9 the IHF is a tool in the conspiracy to suppress knowledge?

10 A Well, where is that -- I'm trying to think
11 of -- one of the documents that we reviewed earlier on --
12 in my timeline I guess is where it's at. It really kind
13 of outlines my feeling if you look at page 6 of the
14 timeline.

15 Q Is this the Westinghouse?

16 A Yes. 1936 where I talk the first time about
17 the IHF. At the bottom of that paragraph where they talk
18 about the Foundation was labeled by at least one person,
19 Vandiver Brown, who was an asbestos company executive, who
20 described to C. J. Stover, the publisher of Asbestos,
21 December 4th, 1936 it as, I quote, the creature of
22 industry and the one institution upon which employers can
23 rely completely for a sympathetic appreciation of their
24 viewpoint, end of quote.

25 I would say that's why it was set up. I would

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1 say that it was set up to share information within the
2 industry. I would never -- I won't go so far as to say it
3 was set up as a conspiracy to hide information, but it was
4 a group that would share information within the industry.
5 And as history has told us and shown us, they did have
6 information that they did not share on a timely basis that
7 in my opinion could have probably prevented at least in
8 part some of the epidemics we have seen to have occurred
9 with asbestos.

10 Q With respect to that situation, do you have an
11 opinion as to the motivation for that failure to publish?

12 A Well, I mean, there's been a considerable
13 amount written on this that have revealed internal
14 documents that have talked about reviews of studies and
15 not to use the word "cancer" and let's keep that out in
16 the British literature and in the American literature. I
17 mean, there's a whole history that's been documented not
18 necessarily by me but by other people.

19 But to answer your question, which I just
20 forgot --

21 Q Whether or not you have an opinion as to the
22 motivation of the IHF --

23 A To answer your question, I think there was
24 motivation on the IHF to control how the material was
25 presented, and I think that's fairly well documented in

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1 the literature.

2 Q Do you perceive the membership of the IHF as
3 being a monolithic group, each of which was fully aware of
4 everything every other member knew and all of whom agreed
5 to all decisions made about publishing?

6 A I can't say yes nor no to that.

7 Q Have you ever looked at the reference Castleman
8 cites when he's quoting that Brown to Stover --

9 A Yeah. I have seen the reference. I can't
10 completely remember exactly the whole thing, but I have
11 read the reference.

12 Q Would you agree with me that that reference was
13 written from the political perspective that it would be
14 left of center?

15 A Left of center?

16 Q The reference that Castleman cites in
17 describing the letter.

18 A What do you mean? The letter?

19 Q No. The reference that Castleman uses in
20 support for this -- in particular this section?

21 A Again, you'll have to enlighten me what the
22 reference was. I've seen it, but I can't remember the
23 citation.

24 Q Isn't that the reference that called the IHF
25 "the drabbing slut of industry"?

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1 A I have to go back and look. I don't know if it
2 was called "the drabbing slut."

3 MR. ROACH: You talking about the Vandiver
4 Brown letter?

5 MR. GUSTAFSON: No. I'm talking about
6 where Castleman got this.

7 A I actually think that I've seen the letter.

8 Q (By Mr. Gustafson) Where did Castleman get it
9 was the question. What does he cite as the --

10 A Well, the letter --

11 Q No, not where he got the letter, what he cites
12 when he writes this in his chapter?

13 A I don't know. I'd have to go back and look at
14 it.

15 Q Where he got his information basically.

16 With respect to the contents of the IHF
17 summaries or if I can use that word with respect to the
18 articles that are contained in the things that you brought
19 with you today, do you have an opinion as to whether that
20 was a helpful thing to do to summarize scientific and
21 medical articles as they did in industry with the
22 summaries?

23 A I think it was helpful to distribute summaries.
24 I think the fact that they gave citations and references
25 then allowed those that saw those coming to go further to

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1 get the information. So I can't say it was a harmful
2 thing to do.

3 Q Do you have any criticism of the summaries
4 themselves that they either failed to emphasize or
5 overemphasize particular parts of the papers they purport
6 to summarize?

7 A I really haven't done a page-by-page analysis.
8 I may have if I would do that. But right now I'm not in a
9 position to say that I do or I do not.

10 Q Do you know if those summaries were available
11 beyond the membership of the IHF?

12 A I do not.

13 Q Do you know whether or not the IHF summaries
14 summarized articles that were not generally available in
15 medical and scientific literature?

16 A There were some, I think, that were generally
17 available.

18 Q Can you think of any in particular that you
19 think are of significance to the question of asbestos
20 health hazards?

21 MR. WEATHERSBY: Which one do you want?
22 The big one or the little one?

23 THE WITNESS: Just one of these.

24 A It would take me some time to go through this
25 and answer that question. But ones that didn't appear in

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1 what I would consider some of the mainstream literature
2 may not have been available.

3 Q (By Mr. Gustafson) Were there any summaries
4 that appeared only in the -- well, that's not a very --
5 let me withdraw that and start again.

6 Were there any articles summarized in the IHF
7 publications that were not available otherwise? That is
8 to say, did they summarize anything that was only
9 available through the IHF?

10 A Most of the material that they summarized was
11 available in the general literature. I can't tell you if
12 there were any that were not for sure without going
13 through it page by page. And I don't know if you want to
14 do that or not.

15 Q For example, just by way of example, do you
16 recall whether or not you saw summaries of data generated
17 by, say, the Johns-Manville Corporation that
18 Johns-Manville published anywhere other than the IHF?

19 A I don't recall seeing that. It doesn't mean
20 that it's not in there.

21 Q Let's switch topics right now, Doctor.

22 Would you agree with me that in general the
23 making and shaping of steel as takes place in American
24 steel mills in the '40s, '50s, '60s, and '70s was a
25 process that produced a lot of heat?

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1 A Yes.

2 Q Was it characteristic of the working
3 environment within steel mills and open-hearth furnaces
4 that there was a lot of heat around which men worked?

5 A Yes.

6 Q And was heat exhaustion and the effects of heat
7 stress perceived as one of the most significant industrial
8 health problems of the steel mill work?

9 A It was certainly one of them.

10 Q With respect to the effect that heat has on
11 air, would you agree with me that heat causes air to rise?

12 A Yes.

13 Q It's not a trick question.

14 With respect then to the flow of air within a
15 steel mill, an operating steel mill, would you expect
16 based on your knowledge of industrial hygiene practices
17 for the flow of air to be one which comes in at the bottom
18 with cooler air and circulates out higher up as hot air?

19 A Yes.

20 Q And are, in fact, most steelmaking facilities
21 structured in such a way that hot air is allowed to get
22 out through the top of the roofs that cover the furnaces
23 or the milling and molding devices?

24 A That's correct.

25 Q If asbestos fiber is suspended in the air over

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1 a heat source in a steel mill, would you expect it to be
2 carried up and out of the building with the heat and the
3 heated air?

4 A Some might be. It would depend upon the
5 aerodynamic properties of the fiber, which includes size,
6 weight, shape, that type of thing.

7 Q Is it as a rule of thumb accurate to say that
8 anything which is capable of being suspended in air for
9 longer than a couple of minutes would be carried up and
10 out by the heat-caused air currents in a steel mill?

11 A That could happen, yes. But, however, some of
12 that could settle, too.

13 Q You mentioned that you collect old industrial
14 hygiene textbooks?

15 A Well, not just industrial hygiene but
16 occupational health textbooks.

17 Q In the collection that you've amassed, what is
18 the first date of publication in which you can read in a
19 textbook on either occupational medicine or industrial
20 hygiene that asbestos was something that should not be
21 used in an industrial or commercial application without a
22 respirator?

23 A Without a respirator or some form of personal
24 protection?

25 Q Well, specifically without a respirator and

170 1 then we'll move on to the broader. 2 A Well, I think -- I don't recall if they say 3 respirator, per se, but in Thomas Oliver's 1902 text I 4 think that they talk about dust hazards. And then by 5 the -- I can't remember the exact date of publication, but 6 the Lanza textbook, and I think it came out in the '30s, 7 they talk about protection. I have not specifically gone 8 back and reviewed that question for this deposition. I 9 could go back and do a review if you want me to, if you 10 want to hire me to do it. 11 Q Well, I suspect that whatever I want may not be 12 the determining factor in that question. 13 With respect to the textbooks that you have 14 collected, what is the oldest book that advocates or 15 suggests the banning of asbestos-containing products in an 16 industrial setting such as a steel mill? 17 A I can't tell you any textbook that actually 18 advocates the banning, but they do talk about substitution 19 in some of the texts, but I don't know of the word 20 "banning" being used in the earlier textbooks. 21 Q Do any of the textbooks state that asbestos 22 products must be substituted for in a setting such as a 23 steel mill? 24 A Not to my knowledge. I don't know the answer 25 to that.	172 1 Q Have you ever -- 2 A As relates to Morgan? 3 Q As relates to Morgan, yes. 4 Do you know what Morgan Engineering produces? 5 A No. I take it it must be cranes because you 6 mentioned that earlier. 7 Q Oh, darn it. Gave that away. 8 Have you ever produced a report or timeline 9 regarding the crane industry in general? 10 A No. 11 Q Have you formed any opinions regarding the 12 state of knowledge of overhead crane makers? 13 A No. 14 Q Are you aware of any overhead crane 15 manufacturers, including but not limited to Morgan, being 16 in any of the organizations that we've discussed? 17 A I haven't looked. 18 Q And I'm referring to the Industrial Hygiene 19 Foundation. 20 A I haven't looked specifically to see if Morgan 21 was a member. 22 Q But from memory you don't recall if any -- 23 A I haven't looked, and I don't recall any. 24 Q You spoke earlier about the dose-response 25 relationship. When you use that phrase, what do you mean?
171 1 Q Based on your knowledge of the historical 2 development of state of the art on asbestos, when would 3 you say there was a general consensus in the government 4 occupational medicine and industrial hygiene community, if 5 I can use that term, that asbestos-containing products 6 could not be safely used in an industrial setting such as 7 a steel mill? 8 A I can't put a date on that as relates to a 9 steel mill. 10 MR. GUSTAFSON: Doctor, I think we've 11 asked you all the other questions we wanted to 12 ask you earlier, so that will be it for today. 13 THE WITNESS: Okay. Thank you. 14 CROSS-EXAMINATION 15 BY MR. WITTIE: 16 Q And, Dr. Lemen, my name again is Vance Wittie. 17 I represent Morgan Engineering. 18 Have you prepared a timeline or other form of 19 report regarding Morgan Engineering? 20 A No, I have not. 21 Q I'm happy that the very idea of that amuses 22 Nelson. 23 Have you ever been requested to make such a 24 report or timeline? 25 A No, I haven't.	173 1 A I mean the higher the dosage of the toxic 2 material, the higher the risk of developing disease; the 3 lower the dosage of the toxic material, the lower the risk 4 of developing the disease. 5 Q And what are the constituents of dosage? 6 A Dosage is a concentration to which an 7 individual is exposed. 8 Q Would that depend both on the amount of 9 asbestos fibers present in the breathing zone as well as 10 the duration of time the person is exposed? 11 A Both of those are factors, yes. 12 Q Have you any kind of opinion regarding which 13 factor is more important in determining the dosage against 14 the overall risk? 15 A Well, they both play an important factor. If 16 you have a high dosage for a short period of time, you'll 17 have a different amount of concentration that you breathe 18 in. If you have a low dosage for a higher period of time, 19 you could have equally as high a concentration as you 20 breathe in. So both factors play together, and it 21 really -- you have to determine how each factor plays with 22 the concentration in the breathing zone that the person is 23 exposed to. 24 For example, I could have a person breathing at 25 X concentration for eight hours and I could have a person

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1 breathing at a higher concentration, say Y concentration,
2 for three hours and both could actually have the same
3 dosage. So the factors play together.

4 Q Would dosage be basically a function of just
5 multiplying the time by the exposure amount? I mean, is
6 there a direct kind of relationship like that?

7 A Well, there are a lot of other factors that fit
8 in. For example, if you're breathing, if the individual
9 exposed is in a high-activity work which causes their
10 breathing rate to increase, that is a factor that has to
11 be considered also. If they're in a job that's fairly
12 sedentary where they're just sitting there, that's another
13 factor.

14 So there are multiple factors that you have to
15 take into consideration in determining the actual dosage
16 that an individual gets. And in doing that oftentimes
17 they'll break them into sedentary jobs and
18 moderate-activity jobs, low-activity/high-activity jobs,
19 and then also consider that in the amount of dose, both in
20 the time duration and concentration in the atmosphere
21 that's being breathed.

22 Q Have you formed any opinions with regard to the
23 availability of substitute or alternative products for
24 asbestos and its application in braking products?

25 A No.

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1 Q Have you ever given an opinion on the subject
2 in any other proceeding?

3 A On substitution?

4 Q On substitution specifically related to braking
5 products.

6 A I don't believe so. I can't recall ever doing
7 that.

8 Q Are you aware of any information indicating
9 release of asbestos fibers in harmful amounts merely from
10 the ordinary operation of brakes?

11 A Well, there are several papers written about
12 brakes. I have a series of articles that I have put
13 together on measurement of dust concentrations and
14 asbestos concentrations coming from brakes during various
15 stages of operation. I don't recall off the top of my
16 head those concentrations, but I do have a file that
17 delineates that. I'm thinking specifically of papers by
18 Lorimer, Rohl, and others.

19 Q Do they pertain to brakes in normal operation
20 or do they pertain to persons working with those brakes in
21 repair functions?

22 A They pertain to both as I recall but
23 principally working with repair of brakes.

24 MR. WITTIE: I think that's all I have.
25 I'll pass.

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1 MR. WEATHERSBY: I think that's it.

2 MR. GUSTAFSON: I thought of another one.

3 MR. WEATHERSBY: Go ahead. I'm about
4 through.

5 RECROSS-EXAMINATION

6 BY MR. GUSTAFSON:

7 Q All right, Dr. Lemen. I want you to confine
8 your answer to one based on information published in the
9 medical and scientific literature. Disregard anything
10 that may not have been available because it was not
11 published.

12 When, based on information available in the
13 medical and scientific literature, should an industrial
14 consumer such as a steel mill have no longer specified or
15 purchased asbestos-containing thermal insulation products?

16 A You mean published in a paper?

17 Q No, sir. Based on the general published
18 information regarding the health hazards associated with
19 asbestos use in the general medical and scientific
20 literature, at what point do you believe based on your
21 knowledge of the development of that literature should an
22 industrial consumer such as a steel mill have no longer
23 specified for use in its plants or purchased for use in
24 its plants an asbestos-containing insulation product?

25 A I can't answer when they should not have

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1 specified. I can answer it by saying that by 1930 they
2 should have known about the health hazards pertaining to
3 the disease asbestosis and that by the mid-'50s they
4 should have been well aware of the cancer-causing ability
5 of asbestos to cause lung cancer, and by the early 1960s
6 they should have been aware of the disease mesothelioma.

7 But I can't tell you when they should have
8 stopped purchasing because they may have been able to
9 continue purchasing throughout that period of time if they
10 applied appropriate engineering controls and methods to
11 prevent worker exposure to those materials.

12 Q You anticipated and probably answered my next
13 question which was going to be on engineering controls.
14 Maybe I can avoid the answer by saying: If I was to ask
15 you at what point engineering controls should have been
16 instituted, you would give me the same years for the same
17 disease processes?

18 A Yes, I would.

19 Q And if I was to ask you the same question but
20 ask at what point should an industrial employer such as a
21 steel mill have insisted on at least respiratory
22 protection for its employees who worked around
23 asbestos-containing materials in the absence of
24 engineering controls, would you give me the same years for
25 the same diseases?

178 1 A Yes, I would. 2 MR. GUSTAFSON: Thank you. 3 MR. WEATHERSBY: Signature? 4 MR. ROACH: What do you want to do on 5 signature? 6 THE WITNESS: It's up to you. 7 MR. ROACH: We can waive it if you want. 8 THE WITNESS: To waive it is fine with me. 9 (Discussion held off the record.) 10 (Defendants' Exhibit No. 61 marked for 11 identification.) 12 MR. WEATHERSBY: I've marked as 13 Defendants' Exhibit 61 Lemen as the last 14 exhibit the collection of documents that 15 Dr. Lemen and I went through in the process. 16 RE CROSS-EXAMINATION 17 BY MR. WEATHERSBY: 18 Q And Dr. Lemen, I believe these were documents 19 that you had provided to me; is that correct? 20 A You had requested through Mr. Roach that I 21 provide them, and I did. 22 Q And these are the same as we discussed earlier 23 that were in your notebook? 24 A That's correct. 25 Q And reflect your Westinghouse-related	180 1 MR. WITTIE: (Nods head affirmatively.) 2 MR. WEATHERSBY: And I'll just pass them 3 over to Danny and go from there. 4 (Deposition concluded at 5:07 p.m.) 5 --- 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
179 1 contribution to the timeline? 2 A Yeah. 3 Now, on the documents, I did have a question on 4 the documents I was missing. As I get those, should I 5 provide them to Mr. Roach and then provide them to you? 6 MR. ROACH: Or just provide them directly 7 to Danny. 8 MR. WEATHERSBY: That would be the thing 9 to do. 10 THE WITNESS: Okay. I don't know when I'm 11 going to get them, you know. 12 MR. WEATHERSBY: That's okay. 13 THE WITNESS: There are about three or 14 four that are in there. 15 MR. GUSTAFSON: There's three. 16 Q (By Mr. Weathersby) And we discussed those 17 that were missing as we went through, I believe? 18 A Right. 19 What about these (indicating)? 20 Q Those were extras. I think we determined that 21 those were simply duplicates of others that you had there. 22 MR. WEATHERSBY: And that's agreeable to 23 everybody then? 24 MR. ROACH: Sure. 25 MR. GUSTAFSON: It is to me.	181 1 CERTIFICATE 2 GEORGIA: 3 GWINNETT COUNTY: 4 5 I hereby certify that the foregoing deposition 6 was taken down, as stated in the caption, and the 7 colloquies, questions, and answers were reduced to 8 typewriting under my direction; that the foregoing 9 transcript is a true and correct record of the evidence 10 given. 11 The above certification is expressly withdrawn 12 and denied upon the disassembly or photocopying of the 13 foregoing transcript, unless said disassembly or 14 photocopying is done under the auspices of Wheeler 15 Reporting Company, Inc., Certified Court Reporters, and 16 the signature and original seal is attached thereto. 17 I further certify that I am not a relative or 18 employee or attorney of any party, nor am I financially 19 interested in the outcome of the action. 20 This, the 26th day of July, 1999. 21 22 <i>Daniel M. Gershwin</i> 23 Daniel M. Gershwin, 24 Certified Court Reporter 25 B-1012

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