currently has 47 members, each of which is a company that mines and mills the naturally-occurring mineral asbestos, manufactures products containing asbestos (primary manufacturers), and/or fabricates asbestos-containing products for specific uses (secondary processors). The mining and milling and primary manufacturing activities of AIA/NA's members constitute a majority of all such activities in North America. AIA/NA's members range from large multi-million dollar companies with many non-asbestos, as well as asbestos, product lines to small companies whose entire product line is dependent on sale of asbestos or asbestos-containing products. AIA/NA's members are listed in Attachment I.

3. AIA/NA is one of the petitioners in the U.S Court of Appeals for the Fifth Circuit seeking review of the emergency temporary standard for asbestos, issued by OSHA on November 2, 1983, 48 Fed. Reg. 51085 (Nov. 4, 1983) (OSHA Ex. 83). I have prepared this affidavit in support of a request to be made by counsel for AIA/NA and other petitioners that the emergency standard be stayed.

4. Neither AIA/NA nor any of its member companies has sought judicial review (until the filing of the petition concerning OSHA's ETS) of any of the many Federal regulations establishing controls over asbestos. Federal regulations of asbestos that AIA/NA and its members have not challenged include:

a. OSHA's initial asbestos occupational exposure regulation issued May 29, 1971, which set a permissible exposure level (PEL) of 12 fibers/cubic centimeter (cc).

b. OSHA's December 7, 1971, Emergency Temporary Standard for asbestos, which lowered the PEL to 5 fibers/cc.

c. OSHA's June 7, 1972, permanent asbestos standard, which established a lower PEL of 2 fibers/cc, to be effective July 1, 1976.

d. The Mine Safety and Health Administration's (MSHA's) initial issuance of a 5 fibers/cc PEL for mining operations, issued on May 13, 1974.

e. MSHA's March 19, 1976, issuance of a revised asbestos standard for mining, lowering the PEL to 2 fibers/cc.

f. The Environmental Protection Agency's (EPA's) establishment of ambient air emission standards for asbestos under the Clean Air Act, issued on April 6, 1973, which, inter alia, effectively banned use of sprayed asbestos insulation.

g. EPA's regulations on wastewater effluents from asbestos manufacturing point source categories under the Clean Water Act, issued February 6, 1974.

h. EPA's Toxic Substance Control Act regulations requiring all schools to inspect for the presence of asbestos and to notify school residents of the findings, issued May 27, 1982.

i. EPA's Toxic Substance Control Act requirements for all asbestos manufacturers to report comprehensive information on their operations to the Agency, issued July 30, 1982.

j. The Food and Drug Administration's March 14, 1975, regulations restricting the use of asbestos-containing fibers in manufacture of parenteral drugs.

k. The Consumer Product Safety Commission's (CPSC's) December 15, 1977, rule banning asbestos-containing consumer patching compounds and artificial emberizing materials.

l. The Department of Transportation's (DOT's) December 4, 1978, regulations on the transport and handling of asbestos fiber shipment.

5. My duties as AIA/NA's Executive Director include carefully monitoring the planning, development and drafting of governmental regulations and providing information about the asbestos industry to agency staffs working on such regulations. These duties have caused me to confer and meet regularly with OSHA and other government regulatory officials during the past nine years.

6. In preparing this affidavit, I have reviewed the emergency temporary standard and the preamble thereto, as well as the books and records of AIA/NA. I have also reviewed the affidavits prepared by AIA/NA members, sister trade associations, and outside consultants in support of a request to stay OSHA's asbestos ETS.

I. History of OSHA Activities on Asbestos (1975-1983)

A. 1975 Proposal and Contractor Reports (1975-1979)

7. As stated above, my employment with AIA/NA began in 1974. Shortly thereafter, in October 1975, OSHA proposed lowering the asbestos permissible exposure level (PEL) from 2.0 to 0.5 fibers/cubic centimeter (cc), 40 Fed. Reg. 47652.

In response to that proposal, AIA/NA canvassed the asbestos industry to provide OSHA with detailed information on the then-existing state of asbestos control technology and exposure levels. The information obtained was then summarized and provided to OSHA in a report from AIA/NA's contractor, Weston Environmental Consultants. Even though AIA/NA had provided substantial data, OSHA held no hearings and took no action on its 1975 proposal.

8. Instead, OSHA decided to develop additional information on the asbestos industry. Between 1976 and 1979, three different OSHA consultants prepared assessments of the technological and economic feasibility of a new standard (OHSA Exs. 84-006 through 84-008 prepared by RTI and the underlying Clayton and Consad reports referenced therein). Throughout this period, AIA/NA continued to provide information to OSHA and to update OSHA on asbestos regulatory developments around the world. In this connection, AIA/NA in 1979 provided OSHA with the exhaustive document and study prepared jointly by industry, labor, academia and government for the Health and Safety Executive of the United Kingdom (OSHA Ex. 84-216).

B. Efforts to Deal Specifically with Construction Industry Exposure

9. Perhaps the most important activity since 1975 consisted of the extensive work done by OSHA, labor and industry on exposure to asbestos in the construction industry. This

was an aspect of asbestos regulatory activity which OSHA announced in 1975 would require special treatment (40 Fed. Reg. at 47652).

10. In response to OSHA's concerns about asbestos regulation in construction activities, AIA/NA expended considerable effort and resources to develop a practical means of controlling asbestos exposure in construction. The product of these efforts was a "Recommended Standard for Occupational Exposure in Construction and Other Non-Fixed Operations," submitted to OSHA in February 1980. AIA/NA's proposal, submitted jointly with the Asbestos Cement Pipe Producers Association, described the problems in controlling asbestos exposures effectively at construction sites and recommended an alternative regulatory approach resting on mandatory use of work practices demonstrated to achieve exposures below the permissible exposure level.

11. During the period 1980-82, OSHA committees reviewed the problems associated with the construction industry and the merits of an alternative approach such as that proposed by AIA/NA. A work practices approach along the lines suggested by AIA/NA was subsequently endorsed both by the OSHA Advisory Committee on Construction Safety and Health in its Report on Occupational Health Standards for the Construction Industry (May 16, 1980) and by an OSHA/National Institute of Occupational Safety and Health (NIOSH) Task Force in its Response

to the Report on Occupational Health Standards for the Construction Industry (January 2, 1981) (See OSHA Ex. 84-307).

C. OSHA's Various Announcements of Plans to Revise the Asbestos Standard (1980-1983)

12. In light of the various contractor reports discussed above and the activity underway on construction industry exposure, OSHA announced in May 1980 that it would propose a revised permanent asbestos standard in the fall of 1980, 45 Fed. Reg. at 36973 (May 30, 1980). This was followed by a further announcement in November 1980 that OSHA was "developing a proposal to revise the current standard for occupational exposure to asbestos" and that it had already completed a "preliminary evaluation of the potential impact on industry of regulation of asbestos," which was "currently being updated." 45 Fed. Reg. at 77841 (November 24, 1980). OSHA's announcement further stated that it was "performing analyses of the economic and technological impact of [the 0.5 PEL proposal originally issued by OSHA in 1975] and [of] alternative exposure levels." The November 24, 1980 announcement promised a proposal in late winter 1980.

13. On March 12, 1981, AIA/NA met with then newly-designated OSHA Assistant Secretary Thorne G. Auchter for the purpose of urging Mr. Auchter to initiate a rulemaking on a revised asbestos standard covering all phases of asbestos

exposure, including exposure in the construction industry. Mr. Auchter promised to consider the matter and encouraged AIA/NA to continue communicating its views to OSHA. The same message was communicated to Mr. Auchter in a letter on April 1, 1981 (Attachment II).

14. Late in 1981, OSHA completed a preliminary quantitative risk assessment of asbestos (Ex. 84-001, dated August 12, 1981), partial results of which were released to the public on January 13, 1982, 47 Fed. Reg. at 1807. This preliminary risk assessment is characterized in OSHA's recent ETS notice as "in approximate agreement" with the risk assessment underying the ETS, 48 Fed. Reg. at 51132.

15. Despite the various announcements of OSHA's intent to issue a revised asbestos standard, no OSHA proposal was forthcoming during 1980, 1981 or 1982. On April 7, 1983, AIA/NA met again with Mr. Auchter to urge that he initiate rulemaking hearings on a revised proposal that would deal with asbestos exposure in the construction industry. In that connection, AIA/NA presented Mr. Auchter with a revised report and recommended construction industry standard (OSHA Ex. 84-307). AIA/NA's revised recommended standard reflected changes to its 1980 proposal as suggested to the Association by the AFL-CIO Building Trades-Construction Department.

16. Shortly thereafter, Mr. Auchter again committed OSHA to initiating rulemaking hearings on asbestos. This

commitment came in the form of an April 11, 1983 letter to Mr. George H. R. Taylor of the AFL-CIO (Attachment III) announcing Mr. Auchter's intention "to accelerate" OSHA's schedule for an asbestos rulemaking with hearings to be held during the summer of 1983 and with a final rule promulgated by the fall of 1983.

17. To assist OSHA in planning summer 1983 hearings on a permanent asbestos proposal, AIA/NA sent the agency on June 2, 1983 (OSHA Ex. 84-261) a list of the expert witnesses who had appeared before the Royal Commission on Asbestos in Ontario, Canada, a panel of three academics appointed by the provincial government to report on asbestos health effects and regulation.

D. OSHA's Consideration of an Asbestos ETS (1983)

18. During the past two years, OSHA has denied requests for issuance of emergency temporary standards for ethylene oxide, on September 28, 1981 (OSHA Ex. 84-283); for ethylene dibromide (EDB), on December 16, 1981 (OSHA Ex. 84-282); for formaldehyde, on January 29, 1982 (OSHA Ex. 84-281); and for benzene, on June 1, 1983 (OSHA Ex. 84-280). In explaining the denial of the request for an emergency standard on EDB, Assistant Secretary Auchter stated that issuance of emergency standards would result in "a loss of agency time, effort, and resources that could have been used in the production of

standards capable of withstanding searching legal review" (Attachment IV, letter from Thorne G. Auchter to Congressman George Miller, June 22, 1983).

19. On June 15, 1983, and subsequently, a number of labor unions petitioned OSHA for issuance of an emergency temporary standard on asbestos (OSHA Exs. 84-284 through 84-294 and 84-387 through 84-391).

20. On June 28, 1983, Assistant Secretary Auchter testified at a hearing of the House Subcommittee on Manpower and Housing. In response to questions about OSHA's asbestos plans, Mr. Auchter indicated that OSHA planned to complete rulemaking hearings on a permanent standard and to issue a revised standard by late 1983 or the first part of 1984 and that he believed the agency could meet such a timetable. Mr. Auchter further indicated that no emergency asbestos standard was warranted because OSHA did not have the necessary employee exposure data and because the exposure information OSHA did have indicated worker exposures were already well below the 2 fiber/cc standard. (See the transcript excerpts in the Affidavit of Claudia Gould.)

21. By early summer 1983, OSHA had revised the quantitative risk assessment developed in 1981 (see ¶ 14 above). Further minor revisions were made thereafter and a final quantitative risk assessment, providing the underlying basis for OSHA's ETS was placed on the public record on November 7,

1983 (OSHA Ex. 84-393). Although minor changes had been made, the results were "in approximate agreement" with OSHA's 1981 assessment and essentially identical to the draft assessment (OSHA Ex. 84-349) in OSHA's possession since early summer (see OSHA Ex. 84-392, at 5).

22. From many conversations with OSHA officials during June and July 1983, I learned that OSHA was drafting a permanent asbestos proposal. I was subsequently told that OSHA decided to turn its draft permanent proposal into an ETS announcement in late July and had completed a draft ETS document for publication in the Federal Register by the first week of August 1983.

23. On September 1, 1983, I wrote to Mr. Auchter and Secretary of Labor Donovan on behalf of AIA/NA, "urg[ing] the Agency to discard such an [ETS] initiative and instead to concentrate its efforts toward developing a reasonable, cost-effective permanent asbestos standard that will provide meaningful protection to worker health." (Attachment V). The letter further urged OSHA to develop a revised permanent standard "in an expedited manner."

24. During September and in October 1983, I was told by OSHA officials on numerous occasions that no decision had been reached by the Department of Labor on whether or not to issue an emergency standard.

25. On October 7, 1983, together with AIA/NA's legal counsel, I met with Mr. Auchter and explained that an ETS

was not warranted and that it would cause irreparable business losses to AIA/NA member companies. I informed Mr. Auchter that issuance of an ETS would have serious adverse effects on AIA/NA members' ability to market asbestos-containing products and that AIA/NA strenuously opposed any action which would deny its rights to a prior rulemaking hearing. I further informed Mr. Auchter that AIA/NA was prepared to meet any expedited schedule for a rulemaking and hearings provided OSHA acted through a permanent standard revision rather than an ETS and promised to do everything within AIA/NA's power to meet such a schedule. My views were again summarized on October 13, 1983, in a letter to Secretary Donovan (Attachment VI).

26. Notwithstanding the foregoing, I was informed on November 2, 1983 by OSHA Deputy Assistant Secretary Patrick Tyson that OSHA would issue an emergency asbestos standard. Shortly thereafter, AIA/NA and the other petitioners filed suit in the United States Court of Appeals for the Fifth Circuit.

E. Contrast with Asbestos Regulation in Other Countries

27. Part of my job as Executive Director of AIA/NA is to monitor regulation of asbestos by countries around the world. During the seven years OSHA has been working on a revised asbestos standard, many other nations and the European

Economic Community (ECC) have also been considering revisions of asbestos regulations.

28. As previously noted (¶ 8 above), the United Kingdom completed a comprehensive report on asbestos regulation in 1979 which has resulted in the tightening of that nation's asbestos regulations. The EEC this year, after careful scrutiny and extensive deliberation, adopted an asbestos workplace regulation (Attachment VII). The most recent compilation of national asbestos workplace exposure regulations was issued last month by the International Labor Organization (Attachment VIII). As that compilation indicates, no nation currently regulates exposures to chrysotile asbestos (the form of asbestos that accounts for more than 90% of all asbestos being used in the United States today according to the U.S. Bureau of Mines' annual surveys of asbestos consumption) at an exposure level as low as the ETS level of 0.5 fibers/cc. Only the United Kingdom and Zambia have considered PEL's that low, and in neither country will such standards be effective until 1984.

29. In no case were asbestos standards lowered on an emergency basis. Rather in every case, the country in question conducted extensive proceedings, empanelled committees of scientific experts, and otherwise engaged in a full deliberative processes with substantial public input before taking action to reduce asbestos exposure limits. Only OSHA has decided to take action without such proceedings.

II. The History of Continuing Reduction in Asbestos Exposures in the United States

A. Industry Overview

30. During my more than nine years with AIA/NA, I have become closely acquainted with the asbestos industry. Because of my role as AIA/NA Executive Director, I have had literally thousands of conversations with industry personnel and reviewed hundreds of reports on asbestos use and working conditions.

31. Asbestos use has declined dramatically in the United States over the past six years. See the ETS notice, 48 Fed. Reg. at 51098. Numerous plants producing asbestos-containing products and/or fabricating such products have closed or converted to production of non-asbestos products. In part, the declining consumption of asbestos reflects the fact that many products including especially products containing asbestos in a friable form (including many previously marketed insulation products) are no longer marketed. Virtually all asbestos products marketed today contain asbestos locked-in or encapsulated in a matrix such that asbestos fiber release is minimal or non-existent during proper installation and use. In general, the only asbestos-containing products marketed today are either for uses where no acceptable substitutes have been developed or for uses where the asbestos-containing products are far more cost-effective than competing

products. (See OSHA Exs. 84-003 through 84-005; Affidavits of Joseph C. Jackson ¶ 60, John H. Marsh ¶ 10).

32. Beginning before the first OSHA asbestos standard was adopted in 1971 and continuing ever since, the asbestos industry has spent millions of dollars to improve controls and to develop work practices that reduce worker exposures. (See, e.g., Affidavits of Douglas E. Berlin ¶ 9, Alfred E. Netter ¶ 8, Joseph T. Mooney ¶ 8, John J. Francis ¶¶ 7-8). These controls have significantly reduced worker exposures in manufacturing, secondary processing, and installation and use of asbestos-containing products. The various accompanying affidavits from industry personnel describe in detail many of these actions, which are summarized in the following paragraphs of my affidavit.

33. The exposure data relied on by OSHA for its emergency temporary standard are based primarily on data from a 1980 RTI report (OSHA Ex. 84-009), 48 Fed. Reg. at 51902. This report, in turn, is based almost exclusively on analyses performed in 1976 and 1978 (OSHA Exs. 84-006 through 84-008), including the data compiled by AIA/NA in its 1976 Weston Environmental Consultants report. These out-dated data are supplemented by only a few additional visits to individual plants (OSHA Ex. 83-009).

34. More recent exposure data were collected by AIA/NA in 1981. Association members, using the type of form required

by the Environmental Protection Agency pursuant to section 8(a) of the Toxic Substances Control Act, provided employee measurement information that could be aggregated to evaluate prevailing industry exposure levels as of 1980. The aggregate results of our survey indicate that average exposures for workers in primary manufacturing were about 0.3 f/cc and for workers in secondary processing activities approximately 0.2 f/cc:

Sector	Average Employee Exposures in Fibers/cc	Percent of Exposures by Fiber/cc Category		
		<0.5	0.5-2.0	>2.0
Primary Manufacturing	0.3	86.7%	12.0%	0.2%
Secondary Processing	0.2	92.2%	7.5%	0.3%

35. More recent exposure measurements have also been collected by OSHA through its enforcement inspection program. These data, displayed on the next page, constituting nearly 1,000 samples collected between 1979 and 1983, found 85% of all measurements other than in primary manufacturing below 0.5 fibers/cc. The only significant number of measurements above 0.5 fibers/cc found by OSHA were in primary manufacturing. As indicated in ¶ 34 above, and in greater detail below, however, these measurements do not appear representative of actual industry experience.

SUMMARY OF OSHA 1979-1983
INSPECTION DATA FOR ASBESTOS[a/]

SECTOR	NO. OF SAMPLES	≦ 0.5 f/cc	0.51-2.0 f/cc	> 2.0 f/cc
Primary Manufacturing[b/]	138	72 (52.2%)	56 (40.6%)	10 (7.2%)
Secondary[c/] Fabrication	55	55 (100%)	0 (0%)	0 (0%)
Construction[d/]	351	284 (80.9%)	43 (12.2%)	24 (6.9%)
Automotive Aftermarket[e/]	52	51 (98.1%)	1 (1.9%)	0 (0%)
Total--All Industries	953	746 (78.3%)	145 (15.2%)	62 (6.5%)

a/ Source: OSHA Exhibit 84-355. Only TWA personal samples are summarized. Over 60% of all inspections during this period were conducted in response to worker complaints.

b/ Results for SIC 3292 (Asbestos Products), which OSHA has indicated includes most primary manufacturers, 45 Fed. Reg. 36972 (May 30, 1980). Over 73% of the samples in this category fell at or below 1.0 f/cc.

c/ Results for SIC Codes 2451, 3357, 3523, 3531, & 3842, which OSHA has identified as secondary fabrication operations, 48 Fed. Reg. 51094 (November 4, 1983). Also includes SIC 3293 (Gaskets, Packings), which OSHA has indicated includes secondary fabricators, 45 Fed. Reg. 36972 (May 20, 1980).

d/ Includes SIC 1500-1799, as previously indicated by OSHA, 45 Fed. Reg. 36972 (May 30, 1980).

e/ Includes SIC 5500-5599, 3714, 7538 & 7539, as previously indicated by OSHA, 45 Fed. Reg. 36972 (May 30, 1980).

B. Primary Manufacturing Exposures

36. Confirming the findings in ¶ 34 above, more recent 1982 and 1983 data continues to show exposures to workers in primary manufacturing to be below the 0.5 fiber/cc permissible exposure level in OSHA's ETS.

a. Data from all three U.S. manufacturers of asbestos-cement pipe show average exposures in all five domestic pipe plants well below 0.5 fibers/cc (Affidavits of Joseph C. Jackson ¶¶ 17-27, Warren T. Whitley ¶¶ 11-12, A. A. Verploegh, and W. Horace Beasley).

b. Three of the four U.S. manufacturers of asbestos-cement sheet (who represent most U.S. domestic production) also have average worker exposures below 0.5 fibers/cc, with exposures above that level at only a few work stations (Affidavits of Alfred E. Netter ¶¶ 10, 11, Gerald N. von Dohlen, at 2 and Johns-Manville Corp. data in Attachment VIII).

c. Likewise, average employee exposure levels in friction materials manufacture from Raymark Corporation, which has three friction materials manufacturing plants, demonstrate average worker exposure levels well below 0.5 fibers/cc (Affidavit of John H. Marsh ¶ 7). Similar data have been reported in friction product manufacture by General Motors Corporation, which found mean exposure levels in two plants during 1979 of 0.21 fibers/cc (OSHA Ex. 84-009 at II-20).

d. The manufacture of asbestos-containing floor tile has been accomplished at least since 1980 with average exposure levels below 0.5 fibers/cc (OSHA Ex. 84-009, at II-2, to II-21).

e. Similarly, asbestos paper manufacture and manufacture of asbestos gaskets, seals and packing has at least since 1980 generally been accomplished with exposure levels near or below 0.5 fibers/cc (Id. at II-21 to II-22). More recent data from Hollingsworth and Vose, a manufacturer of beater-add gasket paper has found average exposures below 0.1 fibers/cc (Affidavit of Paul Walker).

f. Manufacture of asbestos-containing paints, coatings and sealants has also since at least 1980 been at average exposure levels near or below 0.5 fibers/cc (OSHA Ex. 84-009, at II-22). More recent exposure data from Grundy Industries, Inc., has found average worker exposures in roof coating manufacture of approximately 0.3 fibers/cc (Affidavit of James S. Van Pelt, Jr.). Similarly, 1983 average exposures in manufacture of asbestos-containing protective coatings by Monsey Products Co. have averaged below 0.5 fibers/cc (Affidavit of Joseph T. Mooney, Jr., ¶ 11). Pure Asphalt Company reports plant-wide average worker exposures of 0.5 fibers/cc (Affidavit of John J. Francis ¶ 9).

g. Asbestos textile manufacturing exposures at the three remaining domestic textile manufacturers have also

decreased since data was last collected by OSHA in 1980. Data from Raymark's textile manufacturing plant show average measurements in 1982 of 0.7 fibers/cc (Affidavit of John H. Marsh ¶ 7). Average exposures of 0.1 fibers/cc (with a range of measurements from 0.01 to 0.27 fibers/cc) in the wet-process textile plant of RM Industries have been reported by RM to AIA/NA).

C. Secondary Fabrication Exposures

37. As indicated in ¶ 34 above, AIA/NA's 1981 survey found average exposure levels in secondary processing of asbestos-containing products (i.e., activities such as fabrication of asbestos-cement sheet, asbestos paper, asbestos packings and gaskets, and asbestos textiles) to be around 0.2 fibers/cc.

38. These averages are confirmed by OSHA's own compilation of enforcement monitoring data from these four industry segments (SIC codes 2451, 3357, 3523, and 3842). In every case, time-weighted-average (TWA) measurements from 1979 to 1983 for such establishments were below 0.5 f/cc:

SIC 2451 -- TWA Samples

TOTAL	0 - 0.5	0.51 - 1.0	1.0 - 2.0	> 2.0
1 (100%)	1 (100%)	0 (0%)	0 (0%)	0 (0%)

SIC 3357 -- TWA Samples

TOTAL	0 - 0.5	0.51 - 1.0	1.01 - 2.0	> 2.0
0 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

SIC 3523 -- TWA Samples

TOTAL	0 - 0.5	0.51 - 1.0	1.01 - 2.0	> 2.0
0 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

SIC 3531 -- TWA Samples

TOTAL	0 - 0.5	0.51 - 1.0	1.01 - 2.0	> 2.0
1 (100%)	1 (100%)	0 (0%)	0 (0%)	0 (0%)

SIC 3842 -- TWA Samples

TOTAL	0 - 0.5	0.51 - 1.0	1.0 - 2.0	> 2.0
19 (100%)	19 (100%)	0 (0%)	0 (0%)	0 (0%)

39. The AIA/NA survey and the OSHA enforcement data are consistent with more specific data from companies involved

in or acquainted with secondary fabrication of asbestos containing products.

a. Most asbestos-cement sheet is today not further fabricated after initial primary manufacture. Fewer than 50 such fabricators, with approximately 5 or 6 employees each, can be identified by the three primary manufacturers of asbestos-cement sheet. These fabricators cut sheet under controlled conditions, often employing wet cutting methods, in order to comply with the 2 f/cc standard. As a result, worker exposures average well below 2 f/cc with all but a few workers experiencing exposures below 0.5 f/cc (Affidavits of Gerald von Dohlen, at 3-4; Alfred E. Netter, at ¶¶ 16-18; information provided to AIA/NA by Johns-Manville Corp.)

b. One such asbestos cement sheet fabricator Western Slate Company has just ~~completed an independent~~ received the results of a recent independent monitoring of its Elmhurst, Illinois plant. The worst measurement at any location in the plant was .17 fibers/cc (Affidavit of Robert Hamisch).

c. [Paragraph on secondary fabrication of paper and gaskets.]

d. [Paragraph on textile fabrication.]

D. Friction Product Rebuilding and Refacing Exposures

40. Worker exposure in friction product rebuilding also often averages below 0.5 fibers/cc. Raymark Corporation, for

example, has four friction product rebuilding plants in each of which worker exposures average below 0.5 fibers/cc (Affidavit of John H. Marsh ¶ 8).

E. Ship Repair Exposures

41. In 1980 OSHA's RTI consultant reported typical exposure levels in shipbuilding and repair within the 2 fiber/cc standard and U.S. Navy exposure levels at 0.5 fibers/cc and below (OSHA Ex. 84-009, at II-25).

F. Construction Industry Exposures

42. AIA/NA and member companies have developed and circulated extensively a series of booklets, each of which describes recommended work practices for safe use of various asbestos-containing products (two of which booklets are OSHA Exs. 84-373 and 84-374) many of which are used by the construction industry. The work practice booklets recommend, for example, the proper tools to use when cutting asbestos-containing products and wet, rather than dry, methods to be used for cleaning-up asbestos fibers. When such work practices are employed, exposures to workers in most operations are well below both the pre-existing permanent OSHA permissible exposure level and the newly-announced emergency standard.

43. The effectiveness of employing recommended work practices to control asbestos fiber release has been demonstrated in a number of settings.

a. Average exposure levels in installation of asbestos-cement pipe are below 0.1 fibers/cc work practices are strongly urged by pipe manufacturers and employed by pipe contractors (Affidavits of Warren T. Whitely, ¶ 17; etc). on a time-weighted basis when recommended work practices are employed (Affidavit of Joseph C. Jackson, ¶¶ 33-40). Even when the recommended practices are not employed, worker exposures will average less than 0.5 fibers/cc. (Affidavit of Joseph C. Jackson, ¶ 36.)

b. Average exposures in installation of asbestos-cement sheet are also generally below 0.5 fibers/cc. Most asbestos-cement sheet requires only occasional fitting and drilling during installation at construction sites. Primary manufacturers of asbestos-cement sheet have devoted substantial resources to providing information to contractors on proper methods of asbestos-sheet installation (Affidavits of Alfred E. Netter, ¶¶ 16-17; Gerald von Dohlen, at 3).

III. The Impact of the Emergency Temporary Standard on the Asbestos Industry

44. As previously noted in ¶¶ 23-26 above, AIA/NA representatives repeatedly urged Assistant Secretary Auchter not to issue an ETS, in part because such an action would have a significant detrimental impact on members' ability to market asbestos-containing products. AIA/NA members have informed me on innumerable occasions of loss of sales due to

government announcements suggesting that asbestos products may poses grave risks to workers or consumers. Similar incidents are reported in the Affidavits of Joseph C. Jackson, ¶ 55, Joseph T. Mooney ¶ 14, Douglas E. Berlin ¶¶ 10-12, John J. Francis ¶ 12.

45. OSHA's asbestos ETS was announced less than two weeks ago. It is too early to be able to predict precisely the adverse marketing impact of this latest Government action. However, three AIA/NA members have already reported the loss of major customers within these two weeks.

46. First, Monsey Products, which markets asphalt asbestos coatings and cements at six plants including one in Garland, Texas, received a cancellation of all further orders from one of its largest customers three days after announcement of the ETS. That customer had purchased $2,800,000 worth of products from Monsey as recently as 1980. (Affidavit of Joseph T. Mooney, Jr., ¶ 19).

47. Second, Drilling Specialties Company, which markets asbestos mud additives for drilling operations with its number one and three marketing areas in Texas and Louisiana, respectively, was informed by a large drilling contractor immediately after announcment of the ETS of the cancellation of all further deliveries and told to expect all previously shipped but not yet used products to be returned. (Affidavit of Frank J. Shell, ___).

48. Finally, Pure Asphalt Company received word on November 4, 1983, two days after the ETS was issued, from a major customer for its asbestos roofing products that the customer would no longer allow any asbestos-containing products to be used in its plants. (Affidavit of John J. Francis ¶ 12.)

49. Numerous other AIA/NA members have reported that their customers have expressed serious doubts since issuance of the ETS as to their continued willingness to purchase asbestos-containing products. (Affidavits of [list].) Every AIA/NA member with whom I have spoken, or from whom reports have been received, has indicated that he or she expects increased difficulty in marketing products because of the ETS announcement.

50. OSHA's announcement of a lowered permissible exposure level and its announcement of a stepped-up asbestos enforcement program focusing on construction sites (Attachment IX) is already having, and will continue to have major adverse market impact beyond that created by the spectre that asbestos products pose a "grave danger." Contractors who install asbestos-containing products, as well as drilling operators who use asbestos mud additives, employ a highly transient work force that often moves from site to site. Asbestos worker exposures at such sites are intermittent and typically infrequent. Average exposure levels of such workers average below 0.1 fibers/cc. (Affidavit of Frank J. Shell)

51. Despite these minimal exposures, the OSHA ETS and enforcement program raise serious concerns among contractors and drilling operators that OSHA may require the full range of monitoring and medical surveillance requirements in the OSHA asbestos standard for their workers. If such requirements are imposed, the costs of monitoring and medical surveillance, and associated record-keeping, can be expected to lead many contractors and drilling operators to stop using asbestos-containing products. (See affidavits of Joseph C. Jackson ¶¶ 42-51, Frank J. Shell, Kenneth T. Campbell, _____; etc.)

52. In addition to these marketplace impacts, the OSHA ETS poses severe problems in some primary manufacturing worksites. Thus, although most asbestos operations already have average worker exposure levels well below 0.5 fibers/cc, some plants have a few workers whose average exposures exceed the ETS permissible exposure level. Moreover, asbestos manufacturers are generaly aware of the variability of asbestos monitoring which inevitably causes some exposure measurement results to be above 0.5 fibers/cc even in plants with average exposures well below that level. (Affidavit of Gordon Bragg) These companies, therefore, are concerned that they may have to outfit all employees with respirators to assure compliance with the ETS. [Give some cost examples from the affidavits.]

IV. AIA/NA Efforts to Obtain OSHA's ETS Documentation

53. Apart from the foregoing impacts of the ETS, AIA/NA's efforts to respond to OSHA's action have been hampered by OSHA's delay in making materials available to the public. In its November 2, 1983, press release announcing issuance of the asbestos ETS (Attachment IX), OSHA states that the quantitative risk assessment on which it relies was reviewed by scientific experts outside the agency prior to public release. On November 7, 1983, I requested from OSHA copies of the referenced reviews. Although I was told by an OSHA official that the reviews should be included in the public record, OSHA has yet to make them available to AIA/NA.

54. OSHA relies in its ETS Federal Register notice, 48 Fed. Reg. at 51094, on a report by JRB Associates to estimate the number of asbestos-exposed employees. That report has not been placed on the ETS docket. On November 7, 1983, I requested a copy of the JRB report. OSHA officials