PLAINTIFF'S EXHIBIT

CAP-663

AIA NORTH AMERICA ASBESTOS INFORMATION ASSOCIATION

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2 December 1975

Memorandum For: MEMBERS

Subject: Proposed OSHA Asbestos Standard (III)

Reference: A. AIA/NA Memo. of 25 Nov. 1975

The following information is brought to your attention concerning the proposed revision to the OSHA asbestos standard:

A. Time Extension for Comments: OSHA will publish a time extension of 60 days for comments and make editorial corrections to the proposed revision in the Federal Register this week. New due date for comments will be February 9 vice December 8. A copy of the Federal Register item will be forwarded when available.

B. Inflationary Impact Statement and Analysis: OSHA has awarded a contract effective December 1, 1975 to the consulting firm CONSAD located in Pittsburgh, PA. for preparation of a "Statement of Work for Preparation of Technological Feasibility Assessment and Inflationary Impact Analysis of Asbestos." A copy of the statement of work that OSHA provided the contractor for guidance is attached. CONSAD has been requested to submit their report to OSHA by February 6, 1975. The report must be made available at least 30 days prior to any public hearings on the proposed revision.

C. Environmental Impact Statement: A draft environmental impact statement will be prepared by OSHA as discussed on p. 47659 of the proposed revision. AIA/NA has been advised that the statement, required by the Council on Environmental Quality, will be derived from the preamble to the proposed revision. A 45-day period will be allowed for submission of comments after publication of the statement in the Federal Register of notice of availability of the statement.

As noted in Reference A, the major portion of the December 11 Board of Directors meeting at Stouffer's National Center Hotel, Arlington, VA., will be devoted to discussion of the proposed revision and Association actions. AIA/NA's Executive Committee will meet at Stouffer's on December 10 commencing at noon. Reference A inadvertently indicated this meeting date as December 9.

R. H. Mereness
Executive Director

Enclosure

cc: Guy G. Gabrielson, Jr., AIA/NA Task Force Chairman
Hans Weill, M. D., AIA/NA Medical Advisor
AIA/NA Standards & Technical Committee

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STATEMENT OF WORK FOR PREPARATION OF TECHNOLOGICAL FEASIBILITY ASSESSMENT AND INFLATIONARY IMPACT ANALYSIS OF ASBESTOS

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A. INTRODUCTION

The Occupational Safety and Health Administration (OSHA) is in the process of promulgating a new standard governing occupational exposure to asbestos. Information on both the technological feasibility and the cost of compliance is being sought by OSHA. The study will provide estimates of both the technological feasibility of the standard and the economic consequence likely to result from the various provisions of a new standard currently being considered.

B. STATEMENT OF PROBLEM

1. General Requirements

This study should provide substantial estimates of the technological and economic consequences upon U.S. industry resulting from the implementation of the proposed asbestos standard. Due to the widespread use of asbestos, a detailed analysis of the effect on each industry is impractical. Selection of a representative group of industries should be performed from available data for detailed analysis and reviewed with the OSHA COTR.

2. Deliverables from bidders are defined as

a) Task Plan

b) Monthly Progress Reports

c) Draft Summary Report Due

d) Detailed Technological Assessment and Inflationary Impact Statement.

3. Performance Measurements

Contract performance shall be monitored against a detailed workplan and schedule to be submitted by the Contractor not later than one month after receipt of authorization to proceed. Quality of work shall be judged upon thoroughness and objectivity of fact gathering techniques, establishment of credentials for source data used, logical construction and presentation of rationale as well as the general management of resources within established time and budget constraints.

C. BACKGROUND ON ASBESTOS

1. Description of Hazard and Health Implications

Asbestos, used since antiquity, has widespread and important applications in our modern technological society. There are over 3,000 different products containing asbestos in daily use throughout the U.S. The increasing use of asbestos has added to the urgency to cope with occupational health problems related to the excessive inhalation of asbestos dust. No cure now exists for the diseases caused by inhaling asbestos fibers. Employees exposed to asbestos include an estimated 100,000 insulation workers, 50,000 manufacturing firm employees, 60,000 end product users, and uncounted thousands of construction, shipbuilding, and auto repair workers.

The term "Asbestos" refers to a group of fiberous mineral silicates that are highly abrasive resistant,

incombustible in air, have high electrical resistivity, and can be separated into filaments. The present asbestos standard designates the following types of asbestos as hazardous:

- Chrysotile
- Amosite
- Crocidolite
- Tremolite
- Anthophyllite
- Actinolite.

Exposure to asbestos fibers, even nonrecurring, short duration inhalation of the fibers, can seriously increase the risk of developing the following diseases after a period of years:

- Asbestosis -- nonmalignant scarring of the lung tissue
- Bronchogenic Cancer -- cancer of the lung
- Methothelloma -- a rare cancer of the lining of the chest or abdominal cavities.

Prolonged exposure may also increase the possibility of developing Carcinoma -- cancer of the digestive tract.

Within the last few years, asbestos has been recognized as one of the most hazardous dust contaminants in the work-place. Because of the wide variety of products and users of asbestos fibers, larger numbers of workers are in danger of being exposed to the hazards of asbestos fiber dusts.

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It has been established that cigarette smoking increases the risk of developing lung cancer in workers exposed to asbestos.

Although asbestos has been recognized as a hazardous substance for many years, the lack of environmental data for previous years, and the long latent period for the development of asbestos-related diseases have delayed proving the exposure relationship until recently. The scant data from previous years does not permit the establishment of the dose-response relationship at this time, however, the risk of contacting an asbestos-related disease is believed to be exposure related.

2. Nature of the Occupational Hazard

More than 200,000 employees face risks from asbestos, principally by inhaling asbestos fibers. Recent studies have revealed the presence of asbestos fibers in the lungs of persons having no history of industrial exposure. Presumably, exposure was in the area of ship construction or other work sites where the atmosphere was contaminated with asbestos by spraying operations or other sources of asbestos dust. Some evidence indicates that exposure to an asbestos workers' contaminated clothing is hazardous to passers-by and members of the workers' family. Asbestosis cases are on record that resulted from relatively light exposure of a short duration. Asbestos-related diseases exhibit no known early warning symptoms, erupting as long as 30 years after the exposure period.

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Although asbestos has been known to be hazardous for many years, the first cases were not recorded medically until 1900, some 22 years after asbestos production had become large scale.

Recent studies have shown a high correlation between exposure to asbestos and deaths caused by asbestosis, bronchogenic cancer, methothelloma, and to some extent carcinoma. Researchers are disturbed that many cases presently encountered are the result of conditions relating back to the 1930's. Although conditions of use are improved today, uses of asbestos have expanded, production has increased, and products are geographically more widespread. The effects of exposures in the 1970's may not be known until the end of this century.

Exposure to asbestos may occur on any work site where asbestos products are manufactured, used in production or construction, or repaired. The following are representative of the industries which produce or use asbestos; exclusive of the construction industry:

Industry	SIC
Asbestos Mining	1499
Abrasive Products	3291
Asbestos Products	3292
Caskets, Packing and Sealing Devices	3293
Minerals, Ground or Treated	3295
Mineral Wool	3296

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Nonclay Refractories	3297
Nonmetallic Mineral Products, N.E.C.	3299
Asbestos Paper Products	2661
Shipbuilding and Reparing	3731
Salvaging Marine	4469
Automotive Brake and Transmission Repairing	7539
Ship Boiler Cleaning and Repair	7699

The results of OSHA field testing for asbestos contamination are summarized in the "Addendum" attached, titled: "Fiscal-1975 OSHA Field Inspection Summary Data."

3. Standards in Force and Proposed

An asbestos standard of 12 fibers per milliliter greater than 5 microns in length or 2 million particles per cubic foot of air was included in the initial group of OSHA standards published in the Federal Register on May 29, 1971 (36 FR 10466). It was derived from an established Federal standard promulgated under the Walsh-Healey Public Contracts Act on May 20, 1969.

An emergency temporary standard for occupational exposure to asbestos dust was published in the Federal Register on December 7, 1971 (36 FR 23207). It limited exposure as follows: "The 8-hour time-weighted average airborne concentration of asbestos dust to which employees are exposed shall not exceed 5 fibers per milliliter greater than 5 microns in length, as determined by the membrane filter method at 400 - 450x magnification (4 millimeter objective) phase contrast illumination. Concentrations above 5 fibers per milliliter, but not to exceed

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10 fibers per milliliter may be permitted up to a total of 15 minutes in an hour for up to 5 hours in an 8-hour day."

On January 12, 1972, a proposal for an asbestos standard was published in the Federal Register (37 FR 466). The proposal included the emergency temporary standard and additional rules on subsidiary issues. After receiving recommendations from the National Institute for Occupational Safety and Health and the Standards Advisory Committee on Asbestos in February 1972 and holding public hearings on the proposal in March 1972, the present standard was promulgated June 7, 1972 (37 FR 11318).

The present standard established an 8-hour time weighted average (TWA) concentration exposure limit of 5 fibers longer than 5 micrometers per cubic centimeter of air with a ceiling limit of 10 fibers which became effective July 7, 1972, and a 2 fiber TWA limit to become effective July 1, 1976. (A longer retention period for medical record maintenance will be required, extending the current requirement from 3 to 7 years.)

By way of introduction to the proposed asbestos standard, OSHA has stated:

Pursuant to sections 6(b) and 8(c) of the Occupational Safety and Health Act of 1970 (the Act) (84 Stat. 1593, 1599; 29 U.S.C. 655, 657) and Title 29 Code of Federal Regulations (CFR) Part 1911, it is proposed to revise

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29 CFR 1910.-1001, the standard for occupational exposure to asbestos.

This standard, as revised, would continue to apply to all employments covered by the Act, but would exclude the construction industry. It is OSHA's intention to develop and propose a separate revision to the existing asbestos standard which would be applicable only to the construction industry.

The hypothesized standard scenarios would call for the following:

TWA	CEILING
1.0 fiber/cm^3	5.0
0.5 fiber/cm^3	5.0
minimum feasible*	

Additionally, they would extend the retention period for medical and monitoring records to forty years, or for the duration of employment plus twenty years, whichever is longer; provide procedures for the transfer of medical and monitoring records of certain former employers; require specific minimum data on medical and monitoring records; revise the procedures for initial and subsequent monitoring; modify the definitions of "asbestos" and "asbestos fiber;" add provisions for employee hygiene, information and training; revise and update the requirements for respirators, and warning signs and labels; and

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* This analysis and definition for minimum feasible should consider variations in "minimum feasible" with respect to separate elements of the life cycle of asbestos.

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establish a time parameter for sampling ceiling concentrations; and suggest work practices to be followed for certain operations and processes involving asbestos.

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D. ANALYSIS APPROACH

1. General Methodology

In the organization and performance of this Task Order the contractor must recognize the importance of an interactive relationship with OSHA personnel to facilitate timely and effective achievement of the efforts. A detaile methodology, developed in the form of a specific task plan, shall be the basis for the conduct of this effort. Further the contractor shall assemble and identify a higher experienced interdisciplinary and multidisciplinary group of professionals to accomplish this task plan.

In the course of conducting the technology assessment and inflationary impact analysis, the contractor shall structure an adequate data basis upon which to substantiate those results. This data basis shall reflect all published and available data sources relevant to the analysis, including all data collected by OSHA personnel, as well as technical, governmental, and industrial publications not previously surveyed. Further, additional data, essential to the substantiation of these results, shall be obtained by the contractor as required.

The technological feasibility analysis shall include consideration of the requirements and issues raised by compliance with the proposed standard. Included shall be both a factual presentation of the data basis and professional judgments on the technical feasibility of compliance

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with the standard. This analysis should consider the feasibility of compliance employing generally available engineering controls, administrative practices, monitoring methods and techniques,* personal protective equipment, etc. Primary emphasis is to be given to engineering controls with additional consideration of these other factors as appropriate to address the feasible mechanisms of compliance. This analysis should include a full discussion of the state-of-the-art and any relevant time frames necessary to implement the controls. Further, it should point out any particular problems associated with control to the standard levels for the industries indicated.

The inflationary impact analysis shall consider the most feasible and cost effective remedial approaches required to comply with the standard. While it is vital that the anticipated cost of compliance shall be discussed, it is equally important that the economic ramifications of those costs be considered. In the latter case such direct issues as the financial constraints related to these cost burdens must be considered. Moreover, it is important to address both the primary and secondary effects of incurring these costs in the various sectors of the affected commerce. This consideration must include at least the effects upon employment, productivity, supply/demand of critical materials, market structure, and energy consumption. Further, for this analysis the contractor shall assume that industry

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* The relative economic effects of requiring initial monitoring instead of initial determinations should be examined.

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is in compliance with all standards promulgated prior to the final rule making of the hypothesized standard scenari This is not a naive assumption of total industrial compliance, but rather a recognition that the compliance burden to be analyzed is only that related to the additional requirements contained specifically in the hypothesized standard scenarios under this Task Order.

Finally, the contractor shall address the benefits associated with compliance with the hypothesized standard scenarios. These benefits should include those that might accrue to the workers, employers, industries, and the economy overall.

2. Identification of Specific Sensitivities and Areas of Invited Recommendations

In performance of this Task Order the contractor shou indicate the level of confidence and uncertainty in all areas of analysis. Any economic dislocations should be specifically highlighted. The contractor should review marginal industries to determine disproportionate impacts.

Certain resource constraints of administrative aspects of standards compliance should be analyzed. With only 3500 certified Occupational Physicians in the United States, the burden of the medical surveillance requirements of the asbestos standard upon the medical community must be assessed in light of all other potential demands for their services. A recent Wall Street Journal article [1] reports survey of 140 companies in the Northwest which showed that

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only 41% of the firms provided medical services of one kind or another, yet 25% of the workers had job-related illnesses or injuries, most of which had not been reported to the employers. Additionally, the specific burden of keeping and reporting requirements of the asbestos standards must be analyzed and mitigating recommendations must be presented.

The general availability of technical capabilities and equipment necessary for environmental monitoring of the workplace, as well as that of engineering control equipment, must be assessed.

Consideration must also be given to any specific conflicts or complicating factors presented by other standards, rules and regulations either promulgated by OSHA or other agencies.

3. Task Plan

1. Initiation of Project

The contractor should initiate the task order by meeting with the OSHA Project Officer and other OSHA officials to assure a clear understanding of OSHA's specific needs and to gain a broad overview of the project, including: major assumptions, limitations and the timetable for completion. Agreement should be reached on report contents and regularity, as well as the mechanisms of the review process. The contractor shall analyze the overall skill requirements needed to conduct the project and develop a highly experienced project team with appropriate interdisciplinary

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and multidisciplinary skills. On or before ten calendar days after receipt of authorization to proceed with this task order, the contractor shall develop a step-by-step methodology providing a detailed description of the approach to be used in his efforts. The workplan should be in such detail that OSHA will be able to evaluate the methodology and the contractor's understanding of the problem. It should be segmented into logical phases with appropriate timing and manloading estimates in order to be used as a tool for measurement of the project's progress. The proposed workplan and project staffing shall be reviewed and approved by the OSHA COTR.

A review should be made of all literature and materials available from OSHA, as well as from other governmental and industry sources discussing: OSHA asbestos standards (including action levels, TWA ceilings, recordkeeping, training and medical/environmental surveillance requirements), engineering controls asbestos related processes and the like. Potential sources of data shall be identified.

The contractor should refer to section C.3 of this statement of work to obtain the essential elements of the existing and proposed asbestos standards. By analyzing and reviewing these changes the level of additional controls necessary to achieve compliance will be better understood.

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2. Identification of Data Elements Required for Analysis

The contractor shall identify all data elements required for the completion of the Technological Feasibility Assessment and the Inflationary Impact Statement and construct an adequate data basis upon which to substantiate those results. This effort shall include analysis of the economic impact categories specified by ASPER as well as the utilization of all available OSHA literature and related materials. If the available data is insufficient to perform the analyses required, sources of additional data shall be identified. Such alternative sources may require the development of a sample of firms for each selected industry of sufficient size and diversity to yield data that will be representative of the industry as a whole.

In order to substantiate the results of the Technological Feasibility Assessment and the Inflationary Impact Statement, the analysis shall include, but not be limited to, the following factors:

- Identification of all asbestos source emission points and processes effecting asbestos exposure levels
- Workplace environmental monitoring
- Explanation of any variations in asbestos exposure levels over the workday

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- Time required to implement engineering controls and combinations of controls
- Estimates of construction changes and related problems involved with implementing controls
- Company data such as total employees, production output, number of workplaces, and types of processes
- Estimates of the number of employees exposed to asbestos hazards, their job classification and the degree of exposure
- Estimation of quantities of substances substitute for asbestos
- Estimated changes in transportation, storage, equipment (including new process), and any other significant related costs due to substitution of an alternative substance
- Work practice change costs associated with compliance
- Incremental change in energy required to support compliance;
  - Ongoing energy costs to operate new engineering controls
  - Energy needs to support modified processes and alternative storage and transportation modes
  - Energy required to implement new engineering controls

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- Responsible estimates of the impact of compliance on employment and productivity.

3. Technological Feasibility Assessment of Controls Required for Compliance for Asbestos Industries

The purpose of this subtask will be to analyze the technological feasibility of potential controls considered for industrywide compliance. Emphasis shall be given to generally available engineering controls. If these are not sufficient, there shall be an additional discussion of any other feasible control methods that may be required. These may include work practice controls and personal protective equipment, including respiratory protection. They may also include the utilization of alternative substances and processes. If engineering controls or combinations of controls alone are not sufficient to achieve the levels of exposure required, a discussion of possible long term control solutions shall be included. The analysis shall further include a full discussion of the time frame necessary to implement controls, and shall point out any particular problems associated with controls for each of the industries indicated.

Cost effectiveness is of utmost importance in performing this assessment. The effect of the availability and cost of energy shall be considered.

The results of this analysis and corresponding

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recommendations shall be reviewed and discussed with the OSHA COTR.

4. Estimate Compliance Costs

In Subtask 3, the most cost-effective control method or combination of control method was determi The compliance control cost estimates associated wi the results of Subtask 3 shall include not only eng neering equipment costs, implementation costs, ener costs, and the like, but also the cost of any addi- tional personal protective equipment required as we as administrative control costs (training programs, medical surveillance, environmental monitoring, rec keeping, and the like). Total compliance cost esti mates shall be developed for each plant and industr studied.

The compliance cost estimates shall be reviewe and discussed with the OSHA COTR.

5. Economic Impact Assessment of Asbestos Standar Compliance

In order to best understand and interrelate al applicable considerations and evaluate the overall implications of compliance on asbestos supply and demand relationships and on industry structure, an economic analysis shall be performed. This analysi shall consider, but not be limited to, the followir

- Compliance Costs

  The compliance costs quantified in Subtask 4 including engineering equipment costs, implementation cost, energy cost, personal protective equipment cost, administrative control cost and the like.

- Indirect Costs

  The financial costs of compliance effected by cost of capital, cash flow, depreciation of equipment, etc.

- Energy

  In terms of BTU's, the change in energy requirements resulting from the most cost-effective engineering controls identified in Subtask 3. Consideration shall also be given to the change in energy requirements resulting from the possible utilization of alternative substances in the process stream, variations in specific process rates, or variations in end product process manipulation. Examples of these variations are changing processes, substituting process materials, and modifying end products.

- Critical Substances

  Certain substances have been placed on a list of critical materials by agencies of

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the Federal Government due to their importance to the security of the nation. Asbesto: is one of these critical substances. Asbestos is utilized as a raw material in the production of critical materials and in this respect has an impact on the supply of critical materials. This potential impact shall be evaluated.

- Employment

  Compliance with asbestos standards might hav: significant financial effects on company operations resulting in significant changes in the size of the workforce.

  Several significant factors which might be found to influence employment include:

  .. Firm being forced out of business

  .. Modifying process or adopting new proce:

  .. Producing alternative substances.

- Productivity

  The implementation of alternative controls may have an impact on worker productivity. In order to evaluate that impact, a good understanding of the work processes involved in the asbestos industries and the implications of new controls must be obtained.

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Factors which might influence productivity include:

- .. Personal protective equipment hindering employee movement
- .. Less efficient alternative process
- .. Medical surveillance implications with respect to productive manhours.

- Market Structure

Examples of the types of changes in market and/or industry structure that this analysis might identify are:

- .. Smaller firms going out of business or consolidating, producing monopolistic situations
- .. Significant price increases affecting supply/demand relationships
- .. Firms choosing to manufacture alternative products affecting supply/demand.

In developing this economic analysis, it's essential that the contractor produce reproducible rationales for determining the economic impacts including identification of variables, associative relationships, choice of surrogate measures and levels of uncertainty or confidence.

The findings identified shall be reviewed with the OSHA COTR.

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6. Identify the Possible Benefits Associated With Compliance With the Proposed Asbestos Standards

In this Subtask the potential benefits of compliance with the proposed OSHA asbestos standards shall be identified with respect to employees, industry, and overall commerce. These benefits may range from improved employee health to improved environmental conditions.

The benefits identified shall be reviewed with the OSHA COTR.

7. Prepare and Present the Final Inflationary Impact Statement and Technological Feasibility Assessment

In this Subtask the Final IIS and Technological Feasibility Assessment shall be prepared and presented to OSHA. The IIS shall contain a logical presentation of the data basis, the methodology utilized, and the results of the component analyses including sound professional judgment. The Technological Feasibility Assessment shall provide detailed methodologies, alternatives evaluated, and recommendations relating to the technological feasibility of alternative engineering controls.

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