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AIA NORTH AMERICA
ASBESTOS INFORMATION ASSOCIATION
1835 K Street, N.W., Washington, D.C. 20006 • (202) 223-4885

26 August 1976

Memorandum For: MEMBERS

Subject: OSHA Statement of Work for Asbestos Standard – Construction Industry

Enclosed is OSHA's Statement of Work for an Engineering Feasibility Study and Inflationary Impact Analysis for Development of Standard for Control of Occupational Exposure to Asbestos Dust in the Construction Industry. Research Triangle Institute, Triangle Park, N. C., has been awarded the contract effective as of August 17, 1976 with assisgned completion date of January 31, 1977. RTI is required to forward its compelted work plan to OSHA by August 27. This paper will be forwarded to addressees when available. Completion of tasks in the statement of work and "certification" by OSHA is required prior to promulgation of a proposed asbestos standard for the construction industry. (Note: Different than with the manufacturing standard (general standard), OSHA proceedings now require an engineering feasibility study and inflationary impact analysis prior to issuance of a proposal.) Best estimate at this time, without consideration for delays and based on discussion with cognizant OSHA officials, is issuance of proposed standard in February 1977 with public hearing, following comment period, as early as summer, 1977.

Members will recall letter to Dr. Morton Corn, Assistant Secretary of Labor (OSHA), dated July 27, 1976 (distributed by AIA/NA Memo of 7/29/76) reiterated primary recommendation of the Association that the proposed rulemaking on the manufacturing (general) standard be deferred until these proceedings could be consolidated with proceedings for the adoption of a separate regulation for occupational exposure to asbestos in the construction industry. This view was concurred in by a number of non-members of the Association in our response to OSHA of April 9, 1976 regarding the proposed revision to the standard. To date there has been no reply to our July 27 letter, however, it has been learned informally that the Association's recommendation is now under active consideration.

At Directors meeting June 10, it was announced that an Ad Hoc Committee for Construction would be established. The Committee, composed of representatives of AIA/NA Standards and Technical Committee and participants from the construction industry, held

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PLAINTIFF'S
EXHIBIT
AIA-128

an initial meeting August 12-13.

Contemplated activities of AIA/NA in connection with a standard for the construction industry will be reviewed at September 8 Board of Directors meeting.

R. H. Mereness
Executive Director

Enclosure

cc: Mr. G. G. Gabrielson, Chairman, Asbestos Regulation Task Force
AIA/NA Ad Hoc Committee for Construction

RHM:v

141074

TASK ORDER 2

DEPARTMENT OF LABOR

CONTRACT J-9-F-6-0035

FOR

RESEARCH TRIANGLE INSTITUTE

STATEMENT OF WORK FOR AN ENGINEERING FEASIBILITY STUDY AND PREPARATION OF AN INFLATIONARY IMPACT ANALYSIS FOR THE DEVELOPMENT OF A STANDARD FOR CONTROL OF OCCUPATIONAL EXPOSURE TO ASBESTOS DUST IN THE CONSTRUCTION INDUSTRY

A. INTRODUCTION

The Occupational Safety and Health Administration (OSHA) is in the process of revising the standard governing occupational exposure to asbestos. A proposed revision was published on October 9, 1975. Due to the uniqueness of the construction industry (e.g., the multiplicity of non-fixed workplaces, and the utilization of highly transient work forces), it was exempted from that proposal with the intent that a separate proposal on asbestos exposure in construction be developed in the future. Because of a number of special problems faced in construction, an engineering feasibility study with an accompanying economic inflationary impact assessment is needed by OSHA. The study is to determine, using a variety of control methods, the levels of asbestos exposure which are technologically feasible for the various construction activities, and the economic impacts of attaining and maintaining such exposures.

B. STATEMENT OF PROBLEM

1. General Requirements

This study should provide substantial estimates of the technological feasibility of candidate provisions of a new asbestos-construction standard and estimates of the economic consequences upon the U. S. construction industry resulting from the implementation of such an asbestos standard. Due to the widespread use of asbestos, a detailed analysis of the effect on each aspect of the construction industry is impractical. However, a representative group of construction activities where asbestos containing products are installed or removed should be selected for detailed analysis from available data and reviewed with the OSHA COTR.

2. Deliverables From Bidders

Deliverables from bidders are defined as:

a. Work Plan;

b. Monthly Progress Reports;

c. Draft Report on Engineering Feasibility Study;

d. Draft Report on Inflationary Impact (Level 1 or Level 2);

e. Final Report.

3. Performance Measurements

Contract performance shall be monitored against a detailed work

plan and schedule which are to be submitted by the contractor not later than ten days 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, ship-building, 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 minerals as asbestos:

- 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;
- Mesothelioma - a rare cancer of the lining of the chest or abdominal cavities.

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

Within the last few years, asbestos has been recognized as one of the most hazardous dust contaminants in the workplace. 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 fibers. 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 occupational 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, occurring as long as 30 years after the exposure period.

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, mesothelioma, and to some extent other types of cancer. 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 during any construction activity

where asbestos-containing products are either being installed or removed. In the construction industry, these products include:

- Asbestos cement pipe and sheets;
- Vinyl asbestos floor tile;
- Sheet vinyl flooring;
- Roofing papers;
- Packings and gaskets;
- Insulation, pipe, and thermal;
- Coatings and compounds; and
- Reinforced plastics.

Construction activities that have the potential to release asbestos fiber are sawing, cutting, drilling, grinding, or otherwise, handling of these products. Since asbestos has been used in building materials for many years, it should be realized that in building demolition, renovation, and remodeling, the worker is and will continue to be exposed to asbestos fibers.

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 fiber method at 400-450x magnification (4 millimeter objective) phase contrast illumination. Concentrations above 5 fibers per milliliter, but not to exceed 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.

By way of introduction to the proposed revision of the asbestos standard, published in the Federal Register (40 FR 47652), OSHA has stated:

"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."

This study is intended to provide essential information for the development of a special standard for the construction industry.

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 goals. A detailed methodology, developed in the form of a specific work plan, shall be the basis for the conduct of this effort. Further, the contractor shall assemble and identify a highly experienced interdisciplinary and multidisciplinary group of professionals to accomplish this task plan.

In the course of conducting the engineering feasibility study and inflationary impact analysis, the contractor shall structure an adequate data base upon which to substantiate those results. This data base 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. Of special importance will be material collected in support of recommendations of OSHA's Construction Safety Advisory Committee and literature obtained from the Environmental Protection Agency on asbestos which was collected to document EPA's regulations on asbestos.

Further, additional data, essential to the substantiation of these results, shall be obtained by the contractor as required. The engineering feasibility shall include an assessment of a wide range

of construction industry applications of asbestos products. Minimum feasible asbestos concentrations shall be reported based on factual data and professional engineering judgment where appropriate. This analysis will include the type and level of control effort needed to maintain these minimum concentration exposures, personal protective equipment, etc. Additionally, the feasibility of requiring medical surveillance, retention of medical records, and monitoring records similar to those requirements for other industries (Ref.: Federal Register, October 9, 1975) shall be evaluated for the construction industry.

The inflationary impact analysis shall consider the most feasible and cost effective remedial approaches required to comply with these minimum levels defined by the engineering study. 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.

2. Identification of Specific Sensitivities and Areas of Invited Recommendations

In performance of this Task Order, the contractor should indicate the level of confidence and uncertainty in all areas of analysis. Any economic dislocations should be specifically highlighted. The contractor should review marginal construction sub-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 other potential demands for their services. Additionally, the specific burden of keeping records on and reporting asbestos exposures must be analyzed and 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 promulgated by OSHA or other agencies.

3. Task Plan

In carrying out this task order, the contractor should follow

the sequence of tasks identified in Exhibit 1, to the extent possible.

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, frequency, and 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 and multidisciplinary skills. On or before ten calendar days after receipt of authorization to proceed with this task order, the contractor shall provide a step-by-step description of the approach to the task order with a detailed schedule and staffing plan. This 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 so as to be suitable for use as a tool for measurement of the project's progress. The work plan should also show the division of responsibilities between the economic contractor and the engineering subcontractor to be engaged in the study. The proposed workplan and project staffing shall be reviewed and approved by the OSHA COTR.

4. Task Descriptions

The following is a brief description of the efforts to be carried out under each task:

Task A - Collect Information

A review should be made for all literature and materials available from OSHA (including recommendations of the Advisory Committee on Construction Safety and Health), EPA, and other governmental and industry sources discussing: OSHA asbestos standards (including 8-hour TWA limits, ceilings, record keeping, training, medical/environmental surveillance requirements, and engineering controls), asbestos-related processes and the like as well as EPA Background Information on National Emission Standards for Hazardous Air Pollutants and EPA Development Documents.

Individuals and organizations concerned with asbestos exposure in the construction industry should be contacted and existing files built up by these parties should be examined. Such parties include:

- OSHA and NIOSH personnel;
- Selected members of the Advisory Committee on Construction Safety and Health (Asbestos Subgroup);
- Construction Industry Associations;

- Construction Trade Unions;
- EPA personnel;
- Asbestos Information Association of North America;
- Municipal Health Authorities.

Documents relevant to asbestos exposure in the construction industry should be collected. Also, information needed to make a Level 1 Inflationary Impact Statement should be collected. Such information might include Industry Annual Reports, Census Data, and Trade Journals.

Task B - Identify Sources of Asbestos Fiber Exposure

Present and possible future sources of asbestos exposure in the construction industry should be identified. Some of the major sources of exposure are found in the following construction processes or segments of the construction industry:

- Installation or removal of asbestos pipe covers;
- Dry wall applications;
- Remodeling/demolition;
- Construction of power stations;
- Boiler room construction

These and other construction trades where workers are exposed to asbestos should be identified and quantified in such groupings as:

(i) constant exposure to asbestos.

(ii) intermittent exposure to asbestos.

(iii) incidental exposure to asbestos.

A thorough review of previous studies, contacts with governmental enforcement officials, and review of monitoring data and select field studies should be undertaken. The particular construction operations which emit fibrous asbestos should be identified in terms of both the level of concentration and the degree of exposure (by operation or class of workers).

Task C - Estimate Number of Workers Exposed; Levels of Exposure

The construction industry employment associated with various

levels of exposure to asbestos fibers and various fiber emitting operations should be estimated. This should be carried out through a variety of contacts with industry, unions, governmental agencies, health researchers, and other parties knowledgeable about asbestos exposure in construction. Workers who do not handle asbestos, but who are exposed due to proximity to emitting operations should also be identified and their exposure levels noted.

Additionally, information documenting the transiency of construction employment; range of employment durations; turn-over rates; employee multi-employer exposure; seasonal variations; etc., should be developed. Correlation levels of asbestos exposure levels/durations with specific trades/occupations should be obtained

Task D - Analyze Effectiveness of Current Controls

The effectiveness of strategies currently being used to control asbestos exposure in the construction industry should be examined. The current control methods to be examined include:

- Substitution;
- Local exhaust - hood with vacuum;
- Work practices;
  - wetting down;
  - vacuum tools;
- Personal protective devices;
  - respirators;
  - work clothes.

This task should be accomplished through the cooperation of construction companies and the use of certain field studies. Also, federal enforcement agencies (e.g., OSHA and EPA) and municipal enforcement agencies (i.e., those in Minneapolis, Chicago, and Philadelphia) should be contacted. Special attention should be paid to EPA's experience in regulating asbestos emissions at demolition sites.

The effectiveness of current control measures with regard to reduction of exposure levels as well as other factors such as cost of achieving reduced exposure, worker acceptance, long term practicality, changes in worker productivity and other factors should be addressed.

Task E - Propose Alternative Control Strategies

Alternative control strategies should be proposed for the construction industry to achieve reduced exposure levels comparable to those levels proposed in the general industry standard (0.5 f/cc 8-hr TWA limits). The control strategies associated with 2 or 3 alternative exposure levels should be considered for this task. The response levels should be specified and the control strategies to meet these exposure levels should be determined. However, there might be exceptions in certain operations of the construction industry where it may only be possible to determine feasible exposure levels based on existing and available engineering and other control methods.

Asbestos engineering control methods in use should be examined in terms of their applicability to the various exposure situations found in the construction industry. In addition, all experimental control methods being developed, e.g. John Mansville's portable power tools, should be investigated and evaluated. Patent searches should be made. Foreign experience should be evaluated. Analagous dust control systems should be investigated, and their applicability or lack thereof should be explained. Wet fabrication, regulated fabrication areas, pre-fabricated materials should be discussed using all available data based on real world experience.

Work practices that enhance or complement the effectivenes of engineering controls should be identified. Practices working with other substances, or in analagous situations (e.g. shipbuilding) should be examined for possible extension to asbestos work, foreign and domestic experience should be explored. Particularly significant are work practices suitable for use in demolition. Whenever possible actual data should be used.

Exposure monitoring schemes should be examined for applicability to representative construction work situations. The issue as to whether many of the alleged variables in construction (e.g. non-repititive tasks and exposure to the elements) negate the effectiveness of any scheme that calls for monitoring on a less than continuous basis in supplying projected estimates of exposures between monitoring should be examined. This would lead to an identification of the kinds of representative monitoring schemes which would work for the construction industry.

When considering medical surveillance, the additional problem when dates of periodic and preplacement exams occur randomly among employment periods of the transient work force and the related problem of medical recordkeeping should be considered. Statistically, what are the chances that certain kinds of construction employers will be hit with medical surveillance or recordkeeping burdens unrelated to

their employee population or to relative employee exposures to asbestos?

Other ancillary requirements include change rooms and sanitation facilities and should be discussed in terms of prototypical and representative construction work situations. Actual data should be used to the extent possible.

Task F - Analyze Alternative Strategies

Each aspect of the alternative proposed under Task E should be analyzed relative to a full set of relevant considerations, to inclu

- Effectiveness in reducing asbestos fiber exposure;
- Cost of compliance:
  - Capital;
  - Operating and maintenance;
  - Energy;
  - Ancillary (monitoring, medical surveillance, record-keeping, etc.);
- Consistency with hierarchy of controls (OSHA);
- Worker productivity losses;
- Adoption of substitute materials (functionally similar, hazardous in use, more expensive, etc.).

Task G - Screen Inflationary Impacts in Level of IIS Required

An approximate estimate of several relevant alternative provisions should be made to determine whether an IIS will be required. Such estimates should be made for each of the alternatives proposed in Task E and analyzed in Task F.

Task H - Analyze Health Benefits

Potential health benefits associated with exposure levels identified in Task F should be examined. All relevant information on health benefits should be utilized in this task. The record developed on the proposed general industry asbestos standard is expected to provide additional information on health benefits which should be incorporated.

Task I - Prepare Draft Report on Engineering Feasibility Study

A draft report on the results of the analysis of Task F, incorporating the results of Task H on health benefits should be prepared. The report should provide both findings on the various aspects of the analysis and recommendations for a proposed OSHA standard on asbestos in construction. The basis for the recommendations must be thoroughly documented.

Task J - Collect Information for Level 2 IIS

In case an IIS is required, the contractor shall collect whatever additional information is necessary for the more extensive report.

Task K - Prepare Draft Report; Level 1 IIS

In case an IIA would suffice as determined in Task G, such a report should be prepared and submitted to OSHA for review.

Task L - Prepare Draft Report; Level 2 IIS

In case an IIS is required as determined in Task G, such a report should be prepared and submitted to OSHA for review. This report shall include, but not be limited to, the following:

- Compliance Costs - The compliance costs quantified in Task F including engineering equipment costs, implementation cost, energy 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 Task F. 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 the Federal Government due to their importance to the security of the Nation. Asbestos 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 have

significant financial effects on construction operations resulting in significant changes in the size of the work force. Several significant factors which might be found to influence employment include:

- Construction sub-industry being forced out of busines
- Modifying work practices or construction activity, and
- Force substitution of alternative substances.

Productivity - The implementation of alternative controls and work practices may have an impact on construction worker productivity. In other words, to evaluate that impact, a good understanding of the construction activities involved with asbestos materials, and implications of new practices and controls must be obtained. Factors which might influence productivity include:

- Engineering controls hindering operations;
- 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; and
- Firms choosing to manufacture alternative products affecting supply/demand.
- Control methods affecting product quality and, in turn, product acceptability, e.g., wet processing of textile

In developing this economic analysis, it is 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.

Task M - Prepare Final Report

After receiving written and oral comments from OSHA, the contractor should revise the previously submitted draft reports and combine them into a single document for publication by OSHA, if desired.

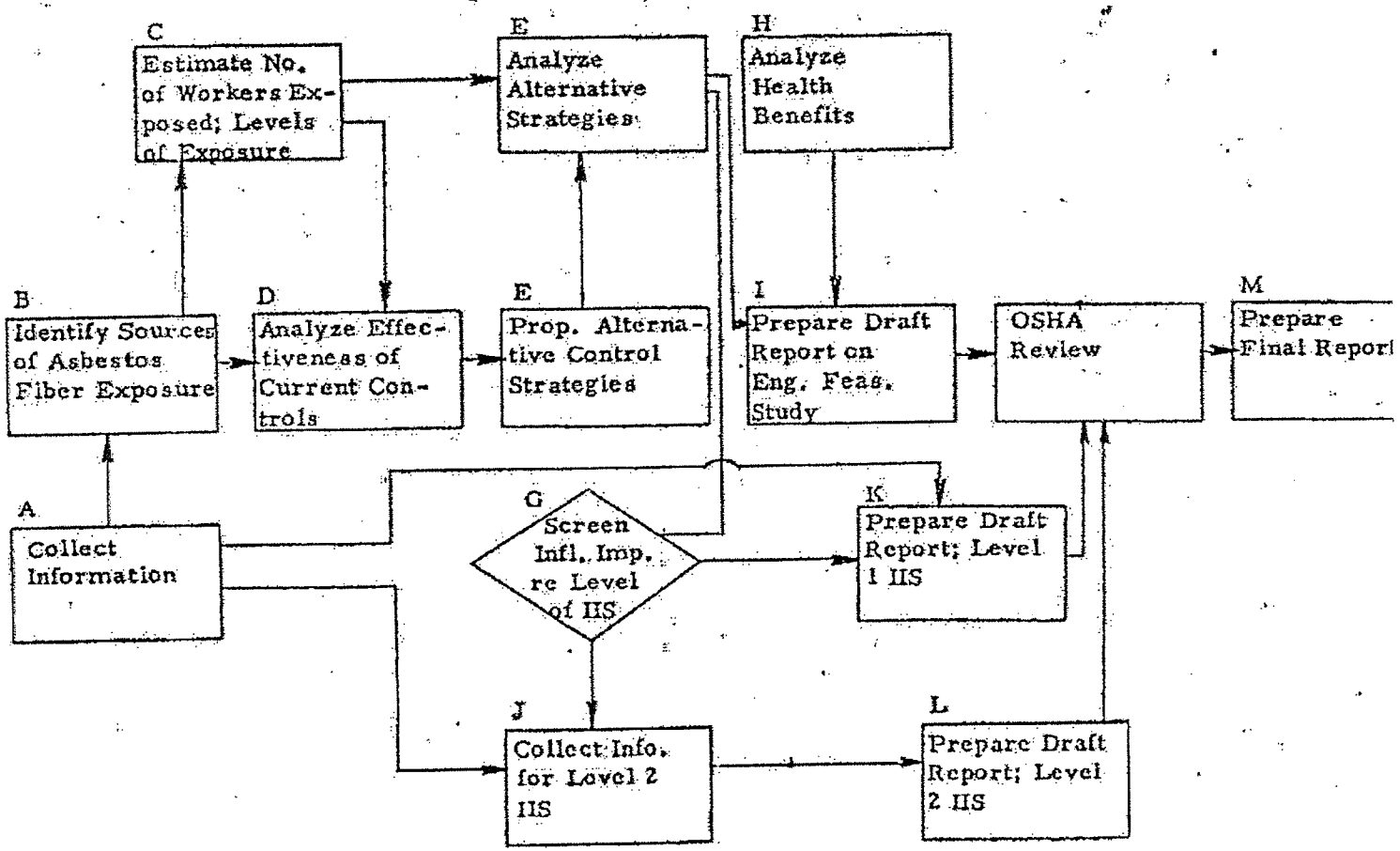
The report shall contain a logical presentation of the data basis, the methodology utilized, and the results of the component analyses including sound professional judgement. The Engineering Feasibility Assessment shall provide detailed methodologies, alternatives evaluated, and recommendations relating to the engineering feasibility of reducing asbestos exposure to minimum levels during construction activities.

SCHEDULE

The following deliverables from the Task Order will be completed as noted.

Report	Due
Oral Progress Reports	Biweekly
Written Progress Reports	Monthly
Work Plan	Ten days after authorization
Draft Report on Engineering Feasibility Study	120 days after authorization
Draft Report; IIA (Option)	120 days after authorization
Draft Report; IIS (Option)	135 days after authorization
Final Report	165 days after authorization

EXHIBIT 1 -- Flow Diagram of Efforts Under the Task Order



141092

TASK ORDER 2: ASBESTOS DUST IN THE CONSTRUCTION INDUSTRY.

This is to initiate Task 2: Asbestos Dust in the Construction Industry, pursuant to the Department of Labor Contract J-9-F-3-0035. The task is generally described under Item II of the contract schedule concerning inflationary impact statement methodology.

SCHEDULE

The following deliverables for this Task Order will be completed as noted.

	REPORT	DUE
*	Oral Progress Reports	Biweekly
*	Written Progress Reports	Monthly
-	Work Plan	Ten days after authorization
*	Draft Report on Engineering Feasibility Study	120 days after authorization
*	Draft Report; IIA (Option)	120 days after authorization
*	Draft Report; IIB (Option)	135 days after authorization
*	Final Report	165 days after authorization
	Data have purchased and billed under Direct Costs	165 days after authorization
*	All computer programs and operational JCL used by RTI in support of Task Order 2	165 days after authorization
*	File description of all master files and working storage files	165 days after authorization

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ESTIMATED COSTS

The following evaluation summarizes the total contractor estimated costs for this Task Order. On receipt and review of the contractor's detailed work plan, labor hours and proposed schedule for performance of the work stated by OSHA, this

Labor Costs

Labor Category	Rate	X	Hours	=	Total
Project Director	$41.88		524		$ 21,945
Senior	36.94		756		27,927
Analyst	27.05		2,662		72,007
			3,942		$121,879

Direct Costs

Computer Charges (TUCC) 4.0 hr. $726/hr.1/	2,904
Economic Data2/	3,025
Total Direct Costs	$ 5,929
Total Task Order Cost	$127,808

Direct Labor Expenses will be billed as specified in the Department of Labor Contract J-9-F-5-0035; Other Direct Costs listed above will be billed as indicated.

Additions

Any computer services costs in excess of the amount stated in this task order will not be accepted by OSHA without prior written justification from RTI and approval by OSHA

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1/ Includes TUCC IBM 370/165 $600/hr. + $60 OMASE (G&A) + $66 fee

2/ Includes $2,500 purchase price + $250 OMASE (G&A) + $275 fee

New Personnel

Project Director	D.F. LeGault
Senior Analyst	B.S. Lee
Senior Analyst	D.R. Johnston
Analyst	M.D. Wright

AUTHORIZATION

Pursuant to the provisions of the Department of Labor Contract J-9-F-0033, this document constitutes a fully executed "Task Order" issued under the statement of work therein and as therein specified and defined. Under the condition specified therein this Task Order is ready for implementation.

David P. Bell
Contracting Officer's Technical Representative
OSHA

Date

Research Triangle Institute

By: _____

Date

141095

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