Kendy Calloway

PLAINTIFF'S EXHIBIT

KRC-511

INTERNAL CORRESPONDENCE

EHMD-MS
(UNIT)

TO W. Litton

FROM Janet Smith

DATE July 10, 1987

SUBJECT Asbestos Removal
Southwestern Refinery

This is a followup to our phone conversation of July 8, 1987 regarding asbestos removal from the BTX exchangers and piping at Southwestern Refinery.

The three proposals I reviewed are inadequate. Since the original solicitation for bids was not full and complete, these proposals do not include information necessary to insure a safe project. The deficiencies in each of the proposals are explained in Attachment 1.

In addition, I have contacted E.J. Vaughan, who is an attorney in the Corporate Law Department. She recommends that Southwestern resubmit the solicitation for bids. In the interim, letters should be sent to each contractor explaining that the June solicitation did not meet the company's required asbestos contract specifications and that another solicitation will be submitted at a later date. Medical Services has developed extensive asbestos bid specifications. I have enclosed a copy of this bid package (see Attachment 2). Each project requires some modification. I recommend you review this bid package, insert any additional information and return the draft to me. A contract for the asbestos removal will then be developed by the Corporate Legal Department.

To assist you in locating additional contractors, I have included a listing of asbestos contractors in the State of Texas (Attachment 3).

The combination of high humidity, hot summer temperatures, Visqueen enclosures, Tyvek clothing and respiratory protection greatly increases the potential for employee heat stress. I strongly recommend that you consider rescheduling this project to coincide with cooler temperatures. If this project cannot be postponed, altered work schedules should be considered so that employees are working either during the cooler morning hours or late evening.

Should you have questions, please contact me at extension 2534.

JS/lh

attachment

Copies without attachment to:

C. DeYong
E. R. Goltra, M.D.
T. Sands
E. J. Vaughan
J. E. Warn

SWRf/Asbestos 6446

1H 041806

ATTACHMENT 1

ASBESTOS PROPOSAL REVIEW:

I. INSULATION AND SHEET METAL SPECIALIST, INC.
5617 WEST UNIVERSITY
P.O. BOX 6588
ODESSA, TEXAS 79767

THIS PROPOSAL DOES NOT ADDRESS:
- CERTIFICATION OF ASBESTOS INSURANCE
- AIR MONITORING & FREQUENCY
- METHODS OF ENCLOSURE
- RESPIRATORY PROTECTION
- MEDICAL SURVEILLANCE
- PREVIOUS REMOVAL EXPERIENCE
- NOTIFICATION & PERMITS
- CRITERIA FOR RE-ESTABLISHING WORK AREA
- EMPLOYEE TRAINING/EXPERIENCE
- FINAL CLEARANCE/LOCK DOWN PROCEDURES
- "COMPETENT PERSON" INFORMATION

II. THORPE INSULATION COMPANY
4780 WESTWAY DRIVE
P.O. BOX 9785
CORPUS CHRISTI, TEXAS 78469

THIS PROPOSAL DOES NOT ADDRESS:
- CERTIFICATION OF ASBESTOS INSURANCE CONTRACTOR SHOULD FURNISH THIS PRIOR TO BEING AWARDED THE CONTRACT
- FREQUENCY OF AIR MONITORING
- LABORATORY UTILIZED FOR AIR MONITORING CONTRACTOR SHOULD PROVIDE ON-SITE ASBESTOS COUNTING
- NOTIFICATIONS, PERMITS
- FINAL CLEARANCE MONITORING
- "COMPETENT PERSON" INFORMATION

III. SERVICE ABATEMENT COMPANY
P.O. BOX 306
BEAUMONT, TEXAS 77704

THIS PROPOSAL DOES NOT ADDRESS:
- PERMITS, NOTIFICATIONS
- AIR MONITORING, FREQUENCY
- THE REFERENCE TO "DISPOSAL BY OTHERS" SHOULD BE DEFINED; WHO ARE THEY REFERRING TO? DOES THIS OTHER COMPANY HAVE ASBESTOS INSURANCE? TRAINED EMPLOYEES?

DRAFT

ATTACHMENT 2

BASIS OF BIDS

ASBESTOS REMOVAL PROJECT

SOUTHWESTERN REFINERY

DATE

TABLE OF CONTENTS

SWRf/Asbestos 6449

1H 041809

SECTION I
INSTRUCTIONS TO BIDDERS
TABLE OF CONTENTS

SECTION I - INSTRUCTIONS TO BIDDERS

1.0 INTRODUCTION

The purpose of Section I is to provide the CONTRACTOR with a summary of pertinent information and Kerr-McGee (hereinafter referred to as COMPANY) requirements to be used in evaluating and selecting a successful bidder.

Sections II, III and IV of this BASIS OF BIDS detail this information and may request additional information. The CONTRACTOR is expected to review all sections for COMPANY requests requiring a response in CONTRACTOR'S proposal. If, in the CONTRACTOR'S opinion, additional information would aid in the evaluation of its proposal, the CONTRACTOR should provide such information in the proposal.

2.0 OVERVIEW

2.1 The CONTRACTOR is to bid on a project to remove and dispose of asbestos and metal jackets from:

- Two shell/tube exchangers, 22 feet long and 49 inches in diameter (O.D.). Insulation thickness is 3 inches.
- Approximately 135 feet of 16 inche pipe in seven pieces. Insulation thickness is 3 inches.

CONTRACTOR is to submit fixed-price type bids which are required to include:

2.1.1 Supervision, labor, procurement, materials, tools, equipment, storage, site security, expediting, inspection, air monitoring, disposal of asbestos and other waste, and such other office and field services as may be required for this project in accordance with this BASIS OF BIDS.

2.1.2 All taxes, assessments, fees and royalties, profits, contributions, insurance, escalation, and other direct and indirect expenses encountered in performance of the work; and

2.1.3 The cost of any permits and licenses required to be in the CONTRACTOR'S name as required by state, federal, and local authorities (these are to be itemized and defined).

2.2 The proposal shall be firm for a period of 60 days. The bidder shall furnish COMPANY three copies of the proposal.

2.3 The bidder's proposals shall be in accordance with this BASIS OF BIDS, any specific conditions stated in the Letter of Transmittal, and any addenda issued during the bidding period.

2.4 It shall be the CONTRACTOR'S responsibility to check to assure CONTRACTOR'S bids are complete.

2.5 Proposals shall not contain any recapitulation of the scope of work. Oral, telegraphic, or telephonic proposals or modification will not be accepted.

2.6 The COMPANY reserves the right to reject any or all bids, and no public opening of the bids will be made.

2.7 The CONTRACTOR shall contact the following person if discrepancies or inconsistencies are found in the BASIS OF BIDS, if questions arise during proposal preparation, and to arrange for a site visit.

Name & Address of contact @ Southwestern — Southwestern Refinery

3.0 CONTRACTOR REQUIREMENTS

3.1 ~~3.2~~ CONTRACTOR'S workers will be required to be experienced by previous work.

Proof must be submitted with the bid proposal.

1H 041813

3.2 CONTRACTOR must supply name and address of the physician conducting medical surveillance.

3.3 CONTRACTOR must have the proper equipment for the work as specified by State Law and job standards as listed in Section III.

3.4 CONTRACTOR must indicate payment rate and schedule for extra work as may be added to the scope of this project.

3.5 CONTRACTOR must supply the Federal and State employer's registration numbers.

4.0 BID REQUIREMENTS

4.1 The bidder's proposal shall include all information required by the COMPANY to make a complete evaluation. BASIS OF BIDS documents which remain unaltered in support of the proposal shall not be resubmitted with the proposal.

4.2 The BASIS OF BIDS documentation which has been added to, revised, or otherwise altered in support of the base proposal, exceptions, or alternate must be submi

4.3 A copy of the abatement plan to be fileo with EPA Region 6 must be submitted with the bid. This plan must be complete and in a form suitable for filing with the appropriate Regulatory Authorities. COMPANY may request changes in the plan of the successful bidder to assure compliance with COMPANY job specifications.

SWRf/Asbestos 6454

1H 041814

4.4 A copy of the written respirator program must be submitted with the bid.

4.5 The bid is to be a fixed-price bid.

4.6 Recommendations for an Industrial Hygiene Consulting firm to be used in conducting air monitoring programs must be submitted for COMPANY approval.

5.0 SUCCESSFUL BIDDER REQUIREMENTS

The successful bidder shall:

5.1 Provide evidence of satisfactory notification to the State and Federal regulatory agencies.

5.2 Provide evidence of satisfactory insurance coverage. (i.e. Workers Compensation and Asbestos liability)

5.3 Obtain and deliver to the COMPANY payment and performance bonds.

5.4 Execute the Contract on the COMPANY'S contract form.

6.0 BID SHEET

The attached bid sheet shall be filled out in full by the CONTRACTOR and shall be returned to the COMPANY along with the other documents of the CONTRACTOR'S proposal.

BID SHEET

6.1 ASBESTOS REMOVAL PRICE

		COST
6.1.1	Two shell/tube exchangers	_____
6.1.2	16" diameter piping	_____

TOTAL BID PRICE $_____

SECTION II
DESCRIPTION OF WORK
TABLE OF CONTENTS

SECTION II - DESCRIPTION OF WORK

1.0 INTRODUCTION

1.1 The CONTRACTOR is to furnish project management, design, procurement, labor, materials, tools, equipment, transportation, warehousing, site security, supervision, expediting, inspection and other such home office and field services as may be required for this project in accordance with the BASIS OF BIDS.

1H 041819

1.3 The CONTRACTOR is to remove and properly dispose of all asbestos-containing materials and decontaminate the lines and equipment.

2.0 SCOPE OF WORK

2.1 The CONTRACTOR is to prepare a plan for removal of all asbestos-containing materials according to State and Federal Code and the following job specifications. CONTRACTOR is to obtain necessary approval of this plan from the appropriate Federal authority as well as the COMPANY.

2.2 CONTRACTOR is to prosecute the work of asbestos removal according to the plan and in compliance with COMPANY, State, and Federal requirements.

2.3 CONTRACTOR is to arrange for and dispose of asbestos-contaminated materials in an approved landfill.

2.4 CONTRACTOR is to decontaminate the work area and return to the COMPANY work areas which have been decontaminated of any asbestos hazards.

2.5 CONTRACTOR is to gain approval of appropriate civil authorities, as well as the COMPANY, in declaring the work areas decontaminated.

1H 041820

Scotch® 7664 "Post-It" Routing-Request Pad

ROUTING - REQUEST

Please

- ☐ READ
- ☐ HANDLE
- ☐ APPROVE

and

- ☐ FORWARD
- ☐ RETURN
- ☐ KEEP OR DISCARD
- ☐ REVIEW WITH ME

To _____

PIPE = 778 ft²

BALANCE ON EXCHANG

SWRf/Asbestos 6461

1H 041821

Date _____

From _____

2.6 CONTRACTOR is to take such other steps as may be necessary for the successful prosecution of this work.

3.0 DESCRIPTION OF WORK

3.1 There is approximately square feet of asbestos containing insulation to be removed and disposed of from two shell/tube exchangers, each 22 feet long and 49 inches in diameter. The exchangers have metal jackets which must also be removed and disposed of as asbestos contianing material. The insulation contains percent asbestos with the balance being .

3.2 There is approximately 135 linear feet of insulation on 16 inch diameter pipe which is divided into seven pieces. This insulation has a 3 inch thickness. Selected bulk samples of this insulation indicate it contains percent asbestos with the balance being .

4.0 JOB SPECIFICATIONS

The following job specifications provide added details to the way the CONTRACTOR is to proceed with the work.

Leave title only on this paragraph - job will title

Do you want to furnish electrical?

4.1 COMPANY will furnish electric power at no cost to CONTRACTOR. CONTRACTOR will be responsible for connecting to approved COMPANY sources. CONTRACTOR is to provide list of electrical users and show voltage and horsepower ratings.

Will you supply potable (drinking) H_2O?

4.2 COMPANY will supply water for showers, washdown and other non-potable uses. CONTRACTOR will be responsible for connecting to approved COMPANY sources.

??

4.3 CONTRACTOR must supply his own source of potable water.

Do you want Altered work hours?

Leave open for needs.

4.4 Working hours are from (8:00am to 4:30pm) Monday through Friday. CONTRACTOR working hours are restricted to this time interval. The gate into the plant area will be secured by the COMPANY at the end of each workday and opened in the morning at approximately 7:30am.

delete this last sentence — redundant

SWRf/Asbestos 6463

1H 041823

05'35

4.5 Pre-Abatement Meeting

After the contract has been executed, the Project Manager shall arrange for a pre-abatement meeting to be attended by the Project Manager, Southwestern Representatives, Corporate Medical Services and the Asbestos Abatement Contractor.

4.5.1 At this conference, the CONTRACTOR'S abatement plans shall be reviewed in detail.

4.5.1.1 Abatement Plans: These plans shall include; drawings of the decontamination facilities and their locations, work area isolation plan with layout of engineering controls (e.g., HEPA filters, etc.,); security program, routing plan for removal of contaminated material from the work site; and a listing of tools, equipment and supplies proposed for use in the abatement program.

4.5.1.2 Description of protective clothing and approved respirators to be used.

4.5.1.3 Explanation of decontamination sequence to be used.

4.5.1.4 Description of stripping, removal, encapsulation, and disposal methods to be used.

1H 041824

4.5.1.5 Description of the final clean-up procedures to be used.

4.5.1.6 Proposed landfill for disposal of waste materials.

4.5.1.7 Names and addresses of all consultants, industrial hygienists, testing laboratories, or other sub-contractors to be utilized during the project.

4.5.1.8 Means of informing the COMPANY of any health hazards created during abatement. This will include, but is not limited to, such occurrences as breaching the containment area, air monitoring tests indicating airborne asbestos above acceptable levels, accidents, etc.

4.5.2 The CONTRACTOR'S standard operating procedures will be reviewed in detail.

4.5.3 Methods of transmitting data and the time requirements shall be discussed and agreed upon.

4.5.4 Emergency notification requirements will be reviewed and discussed in detail.

4.6 ASBESTOS ABATEMENT SPECIFICATIONS

4.6.1 DEFINITIONS:

4.6.1.1 All terms not defined herein shall have the meaning given in the applicable publications and regulations.

4.6.1.2 Authorized Visitors: Any visitor authorized by the Project Manager or any representative of a regulatory agency or other agency having jurisdiction over the project.

4.6.2 AIR MONITORING: DAILY air monitoring requirements shall comply with paragraph (f) of the OSHA Construction Industry Standard 1926.58.

inside enclosure ?

4.6.2.1 Daily air monitoring shall be conducted by a Certified Industrial Hygienist from an independent consulting firm. The choice of the firm is subject to approval by the company.

what is criteria inside enclosure ?

1H 041826

There will be
4.6.2.2 One personal air sample for every four workers.

As a minimum, two (2) personal air samples, must be collected daily from within the work area.

One of these personal air samples must be from a worker collecting and bagging asbestos.

4.6.2.3 ~~An~~ Minimum of, but not limited to, one (1) air sample from each independent exit area collected directly outside and adjacent to the work area.

4.6.2.~~5~~ 4 Air monitoring equipment shall be calibrated to draw the required flow rate during the sampling period.

4.6.3 CLEAN TESTS: After all abatement and clean-up procedures are concluded, a clean test shall be conducted by the CONTRACTOR to ensure cleanliness of the abatement area, prior to re-occupancy of the abatement area.

1H 041827

4.6.3.2 Clean Test samples shall be by aggressive sampling techniques.

4.6.3.3 To be approved, the clean test concentration shall be less than 0.01 [redacted] fibers per cubic centimeter, or the air concentration of asbestos fibers outside the abatement area, whichever is greater.

4.6.3.4 Re-establishment of the work and systems: COMPANY retains the option of conducting additional air monitoring to confirm the results of the clean air testing. This monitoring is in addition to that conducted outside the enclosure. Electron microscopy may be employed for one or more samples to confirm the results of the final testing.

4.6.3.5 Air monitoring results shall be submitted by the CONTRACTOR'S representative to the Project Manager in a timely manner.

4.6.4 ANALYSES: All asbestos analyses shall be performed by laboratories certified by the American Industrial Hygiene Association or by laboratories which:

1H 041828

4.6.4.1 Utilize only laboratory technicians which have successfully completed NIOSH approved courses in the type analysis performed by the technician, and

4.6.4.2 Which participates in the:

a. EPA bulk asbestos sample quality assurance testing program, latest round, and attained a seventy-five (75) percent correct score for that round, for laboratories providing bulk sample analyses, and/or:

b. NIOSH Proficiency Analytical Testing Program, latest round, and attained average results not more than one (1) standard deviation from the NIOSH reported average for the round, for laboratories providing fiber counting analysis.

4.6.4.3 All reports of analyses shall be signed by the technician performing the analyses.

4.6.5 AVAILABILITY OF TRAINED PERSONNEL: There shall be a sufficient number of trained and qualified workers, foreman and superintendents to accomplish the work.

1H 041829

4.6.6 STANDARD OPERATING PROCEDURES: Develop, document, and implement a standard operating procedure during abatement work to ensure maximum protection and safeguard from asbestos

SWRf/Asbestos 6469

exposure of the workers, visitors, employees, and the environment. The procedures should address:

4.6.6.1 Security from unauthorized entry into the work space.

4.6.6.2 Proper protective clothing and respiratory protection prior to entering the work space from the outside.

4.6.6.3 Safe work practices in the workplace, including provisions for inter-room communications, exclusion of eating, drinking, smoking, or in any way breaking the respiratory protection.

4.6.6.4 Proper exit practices from the work space to the outside through the showering and decontamination facilities.

4.6.6.5 Removing, encapsulating or enclosing asbestos in ways that minimize release of fibers.

4.6.6.6 Packing, labeling, loading, transporting, and disposing of contaminated material in a way that minimizes exposure and contamination.

1H 041830

4.6.6.7 Emergency evacuation for medical or safety (fire and smoke) so that exposure will be minimized.

4.6.6.8 Safety from accidents in the work space, especially from electrical shocks, slippery surfaces, and entanglements in loose hoses and equipment.

4.6.6.9 Provisions for effective supervision, air monitoring and personnel monitoring for exposure during the work.

4.6.6.10 Engineering systems that minimize exposure to fibers in the work space.

4.6.7 NOTIFICATIONS, PERMITS, WARNING SIGNS, LABELS, AND POSTERS:

4.6.7.1 Provide the required notification to EPA and any other regional, State and local authority having jurisdiction over the project.

Secure all the permits required for the work, including disposal of asbestos in an approved landfill.

4.6.7.2 Erect warning signs at every point of potential entry from the outside, showing the legend:

DANGER

ASBESTOS

CANCER AND LUNG DISEASE

HAZARD

AUTHORIZED PERSONNEL ONLY

RESPIRATORS AND PROTECTIVE

CLOTHING REQUIRED IN THIS AREA

The warning signs shall be a bright color so that they will be easily noticeable. The size of the sign and the size of the lettering shall be no less than the OSHA requirements (Ref: 29 CFR 1926.58 (k)(ii).

4.6.7.3 Provide the OSHA required labels for all plastic bags and all drums utilized to transport contaminated material to the landfill.

4.6.7.4 Provide any other signs, labels, warnings, and posted instructions that are necessary to protect, inform and warn people of the hazard from asbestos exposure. Post in a prominent and convenient place, at the jobsite, a copy of the latest applicable regulations from OSHA AND EPA.

1H 041832

4.6.8 SUBMITTALS DURING THE WORK: Submit copies of the following items to the Project Manager:

4.6.8.1 Security and safety logs showing names of persons entering the workplace, date and time of entry and exit, record of any accident or emergency evacuation, and any other safety and/or health incident.

4.6.8.2 Disposal certificates.

4.6.8.3 Required permits, clearances, licenses, etc.

4.6.8.4 Air monitoring results.

4.6.9 EMERGENCY PRECAUTIONS: The CONTRACTOR shall establish emergency and fire exits from the work area. Emergency procedures shall have priority.

4.6.9.1 The CONTRACTOR shall be prepared to administer first aid to injured personnel after decontamination. Seriously injured personnel shall be treated immediately or evacuated without delay for decontamination. When an injury occurs, the CONTRACTOR shall stop work and implement fiber reduction techniques (e.g., water spraying) until the injured person has been removed from the work area.

1H 041833

4.6.9.2 The work area shall have a dry-charge ammonium phosphate fire extinguisher with an Underwriters Laboratories, Inc. rating of at least 10 A:B:C, which must be decontaminated upon removal.

4.6.10 RESPIRATORY PROTECTION:

4.6.10.1 The Contractor shall provide works with supplied air respiratory protection. All employees working inside the enclosure will be required to wear supplied air respiratory protection.
SINGLE USE, DISPOSABLE RESPIRATORS WILL NOT BE APPROVED.

4.6.10.2 While in the work area, workers shall always wear a respirator properly fitted to the face.

4.6.10.3 CONTRACTORS shall instruct and train workers in proper respirator use and maintenance, including daily maintenacne and sanitizing procedures.

4.6.10.4 Supplied Air Respiratory Protection:

4.6.10.4.1 Supplied air respirators shall be worn for all gross asbestos removal, excluding glovebag operatons. As a minimum, employees must wear powered air purifying respirators during glovebag operations.

4.6.10.4.3 When supplied air respirators "CC" Respirators are employed, the Air Supply System shall provide Grade "D" breathing air in accordance with OSHA 29 CFR 1910.134 and ANSI Z86.1-1973 Commodity Specification for Air.

4.6.10.4.4 The Compressed Air System for supplied air Type "AA" Respirators (pressure demand/continuous flow) shall be high pressure, with a compressor capacity to satisfy the respirator manufacturer's recommendations. The receiver shall have sufficient capacity to allow a 15 minute escape time for the respirator wearers in the event of compressor failure or malfunction. The Compressed Air System shall have compressor failure alarm, high temperature alarm, carbon monoxide alarm, and suitable in-line air purifying sorbent beds and filters to assure Grade "D" Breathing Air.

4.6.10.4.5 Supplied air ~~Type "C"~~ Respirators shall be worn with belt to minimize possibility of dislodging face mask when hose is snagged in the work area.

4.6.10.4.6 [redacted] a minimum of two spare hose and facepieces shall be available at any time to the Project Manager and his authorized visitors and inspectors to connect to their assigned Type "C" Respirator without having to wait for removal of workers from working area to obtain hose connections.

4.6.10.4.7 All respiratory equipment shall be inspected by CONTRACTOR'S project supervisory personnel at the beginning of each work period, including breaks and lunch periods.

4.6.11 PERSONNEL PROTECTION AND DECONTAMINATION

4.6.11.1 Provide to all workers, foreman, superintendents, and authorized visitors and inspectors protective disposable clothing consisting of full body coveralls, head covers, gloves and foot covers or reusable footwear. Non-disposable footwear shall be left in the work area at all times until disposal at the job completion.

4.6.11.2 Provide eye protection and hard hats as required by job condition and safety regulations. Reusable footwear, hardhats and eye protection devices shall be left in the "Contaminated Equipment Room" until the end of the asbestos abatement work.

4.6.11.3 All disposable protective clothing shall be discarded and disposed of as asbestos waste every time the wearer exits from the work space to the outside through the decontamination facilities.

4.6.11.4 Workers shall wear disposable, full body coveralls and disposable head covers and footwear in the work area.

4.6.11.5 The CONTRACTOR shall provide a change room for workers to put on disposable coveralls, respirators, and head covers before entering the work area.

4.6.11.6 All workers without exception shall:

4.6.11.6.1 Remove street clothes in the change room and put on the disposable coveralls and respirators before entering the work area.

4.6.11.6.2 Remove the disposable coveralls, head covers, and footwear in the work area before leaving the work area, and dispose in labeled plastic bags for asbestos waste. Still wearing their respirators, proceed to the showers and remove their respirators, while showering with soap and water.

4.6.11.6.3 Shower at the end of each day's work before entering the change room to change into street clothes.

4.6.11.7 Workers shall not eat, drink, smoke, chew gum, or chew tobacco in the work area. To eat, drink, or smoke, workers shall remove the disposable work clothes and footwear in the work area before leaving the work area. Still wearing their respirators, workers shall proceed to the showers and remove their respirators while showering with soap and water. Workers shall then dress into a new, clean, disposable coverall to eat, smoke, or drink. The new coveralls can be worn to reenter the work area.

4.6.11.8 The CONTRACTOR shall provide a respirator and disposable coveralls, headcover and footwear to any official representative of the owner, or any regulatory official who inspects the jobsite.

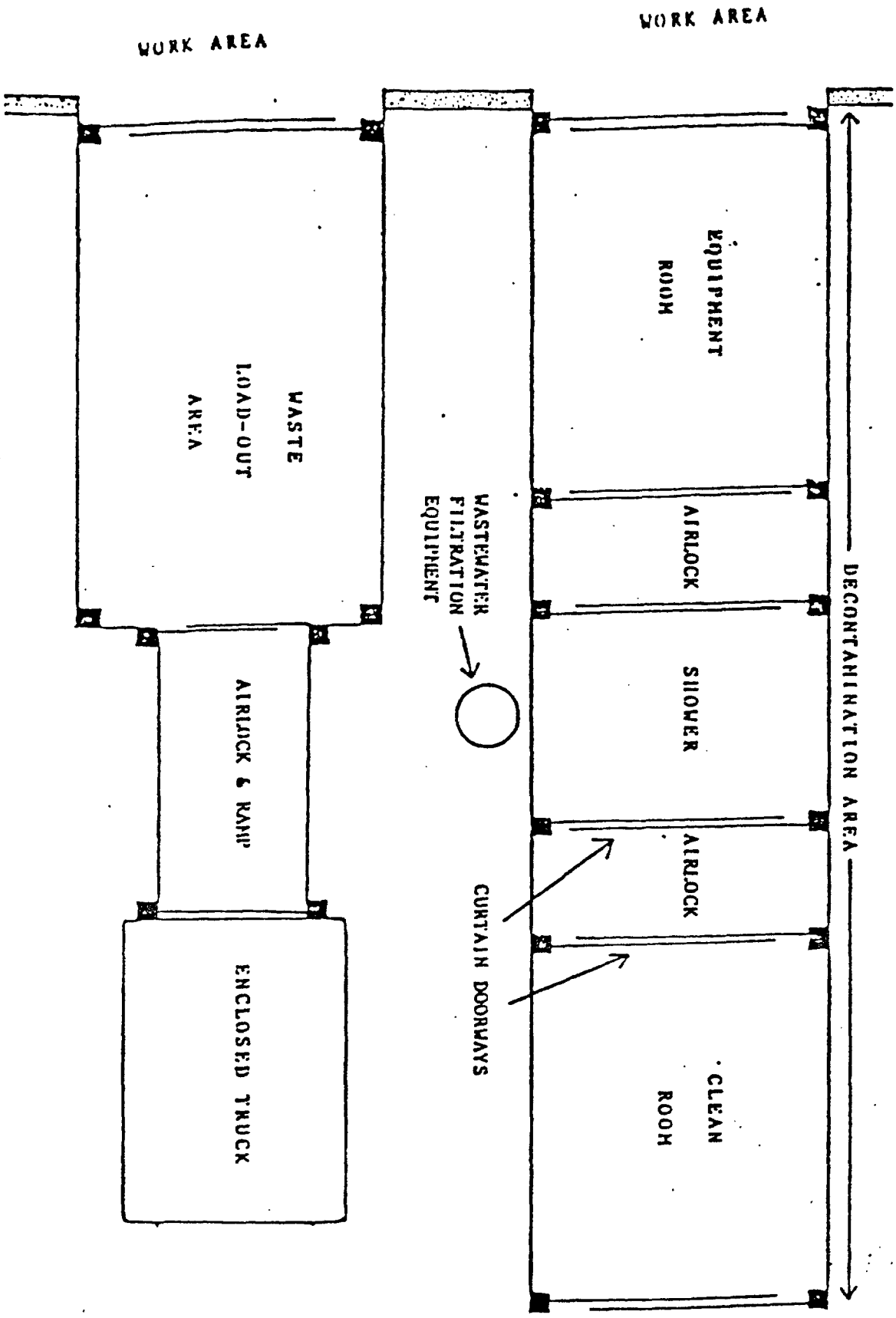
4.6.11.9 All persons entering the work area shall wear approved respirators and disposable coveralls, headcover, footwear, and shall follow the decontamination procedures.

4.6.12 ENCLOSURES, SHOWERS AND TOILETS:

4.6.12.1 For each abatement area, the CONTRACTOR shall provide decontamination facilities located in an area agreed upon with the Project Manager. The decontamination facilities shall include a Decontamination Enclosure System for workers and visitors and a Decontamination Enclosure System for loading of asbestos into trucks for transportation to the landfill.

4.6.12.2 The Decontamination Enclosure System for workers and visitors shall consist of three rooms that serve as three Air Locks as follows: Clean Room at entrance followed by shower(s), followed by Dirty Equipment Room. Figure F-4 illustrates a typical hygiene facility layout contiguous and adjacent to the work area.

FIGURE F-4



SWRf/Asbestos 6481

1H 041841

0660E

4.6.12.3 The Decontamination Enclosure System for loading of asbestos into trucks shall consist of an Air Lock from the work area leading into the Drum Wash and Wipe Room, and another Air Lock leading into the open loading platform and the truck.

4.6.12.4 An Air Lock is a system permitting ingress and egress without permitting air movement. It consists of two curtained doorways, at least eight feet apart. Each curtained doorway shall be constructed by placing three overlapping sheets of plastic over a framed doorway, securing each along the top of the doorway. The first and third sheet shall be secured on one side of the doorway and the middle sheet shall be secured on the other side of the doorway.

4.6.12.5 Provide lockers for storage of street clothes of workers in the Clean Room. Provide in the same room uncontaminated disposable protective clothing and equipment. This room shall be used by workers and visitors to change from street clothes to disposable protective clothing and gear prior to entering into the contaminated area and to dress into street clothing after they have showered and dried in the shower room as they exit from the contaminated area.

1H 041842

4.6.12.6 All shower waste water shall be filtered down to the 5 micron range utilizing filtering mechanisms. The shower filtrates shall be disposed of as a contaminated material. All shower decontamination facilities shall have hot running water.

4.6.12.7 Provide the Dirty Equipment Room with storage for contaminated equipment. In this room, workers and visitors dispose of their disposable protective clothing, except the respirator, as they prepare to enter the Shower Room.

4.6.12.8 The Drum Wash and Wipe Room shall be equipped with the facilities to wash and wipe the outside of the drums prior to the loading into the trucks for transportation to a landfill. Make provisions to prevent any contaminated runoff from the Drum Wash Room.

4.6.12.9 The CONTRACTOR shall provide sanitary facilities for abatement personnel outside the enclosed work area and maintain them in a clean and sanitary condition throughout the project.

SWRf/Asbestos 6483

1H 041843

4.6.13 EQUIPMENT TO BE SUPPLIED BY CONTRACTOR.

4.6.13.1 A sufficient quantity of negative pressure ventilation units is required. Units shall be equipped with HEPA filtration and operated in accordance with ANSI Z9.2-79 (local exhaust ventilation requirements) and EPA guidance document EPA 560, latest edition, Guidance for Controlling Asbestos-Containing Materials in Building "Recommended Specifications and Operating Procedures For the Use of Negative Pressure systems for Asbestos Abatement" shall be utilized so as to provide one workplace air change every 15 minutes, and shall not exhaust into occupied areas.

4.6.13.2 A sufficient supply of disposable mops, rags and sponges for work area decontamination shall be available.

4.6.13.3 A sufficient supply of scaffolds, ladders, lifts and hand tools (e.g., scrapers, wire cutters, brushes, utility knives, wire saws, etc.) shall be provided as needed.

4.6.13.4 Sprayer for spraying amended water shall be provided as needed.

4.6.13.5 Rubber dustpans and rubber squeegees shall be provided for cleanup.

4.6.13.6 Brushes utilized for removing loose asbestos-containing material shall have nylon or fiber bristles, not metal.

4.6.13.7 A sufficient supply of HEPA filtered vacuum systems shall be available during cleanup.

4.6.13.8 Hand tools equipped with HEPA filtered local exhaust ventilation shall be utilized during the installation of enclosures and supports if there is any need to disturb asbestos-containing materials. (As an alternative, asbestos material may be partially removed following proper removal procedures prior to the installation of supports and enclosures.)

4.6.14 SUBMITTALS: In accordance with the Approved Asbestos Abatement Plan, furnish information for the following:

4.6.14.1 Layout of project execution showing the abatement work in stages corresponding to the qualified personnel employed and the configuration of the work space.

1H 041845

4.6.14.2 Security System, warning signs and labels for bags and drums.

4.6.14.3 Wetting agents and low pressure wetting system.

4.6.14.4 Encapsulants

4.6.14.5 Enclosures

4.6.14.6 Wall, floor and opening coverings and sealing tapes.

4.6.14.7 Standard Operating Procedure showing how workmen, visitors, and employees will be protected from exposure and how spaces outside the work areas will be protected from contamination until completion of the work.

4.6.14.8 Samples of disposable protective clothing.

4.6.14.9 Respiratory Protection System including samples of respirators; hoses and a certificate with system literature for the air supply system from manufacturer stating that air supply system meets specifications on quality, quantity and escape time.

1H 041846

4.6.14.10 Fire and emergency evacuation plan.

4.6.14.11 Detailed plans for decontamination facilities, toilets and systems allowing inter-room communication and communication between the work area and the outside.

4.6.14.12 Engineering systems for control exposure showing the number, location and capacity of supply and exhaust systems, the expected direction of flow and the minimum negative pressure in each room.

4.6.14.13 Medical Surveillance records for all personnel.

4.6.15 APPLICABLE PUBLICATIONS: The publications listed below form a part of this specification to the extent referenced. The publications are referenced in text by basic designation only.

4.6.15.1 Environmental Protection Agency (EPA):
Regulations for Asbestos (Code of Federal Regulations Title 40, Part 61.
Guidance for Controlling Friable Asbestos Containing Materials in Buildings.

1H 041847

4.6.15.2 Occupational Safety and Health Administration (OSHA):

Asbestos Regulations (Code of Federal Regulations title 29, Part 1901, Section 1926.58).

4.6.15.3 National Institute for Occupational Safety and Health (NIOSH): "Respiratory Protection . . . . A Guide for the Employee."

4.6.15.4 American National Standards Institute (ANSI):

Z86.1-1973 . . Commodity Specification for Air

Z88.2-1980 . . Practices for Respiratory Protection

Z9.2-1979 . . Local Exhaust Ventilation Requirements

4.6.15.5 U.S. Environmental Protection Agency National Emission Standards for Hazardous Air Pollutants (NESHAPS) Asbetos Regulations (40 CFR 61, Subpart M).

1H 041848

4.6.16 MATERIALS:

4.6.16.1 Polyethylene sheeting for walls and stationary objects shall be a minimum of 4-mil thickness. For floors and all other uses, sheeting of at least 6-mil thickness shall be used in widths selected to minimize the frequency of joints. Polyethylene sheeting utilized for worker decontamination enclosure shall be opaque white or black in color.

4.6.16.2 Disposal bags shall be of 6-mil polyethylene, with labels to meet EPA or OSHA requirements.

4.6.16.3 Lock-down material shall be tinted to ensure full coverage.

4.6.16.4 Disposal drums shall be metal or fiberboard with locking ring tops, with labels to meet EPA or OSHA requirements.

4.6.16.5 Surfactant (wetting agent) shall be a 50/50 mixture of polyoxyethylene ether and polyoxy-ethylene ester, or equivalent, mixed in a proportion of 1 fluid ounce to 5 gallons of water or as specified by manufacturer.

4.6.17 TOOLS AND EQUIPMENT:

4.6.17.1 Airless Sprayer: An airless sprayer, suitable for application of encapsulating materials, shall be used.

4.6.17.2 Asbestos Filtration Device (AFD): Asbestos filtration devices shall utilize high efficiency particulate absolute (HEPA) filtration system.

4.6.17.3 Scaffolding: Scaffolding, as required to accomplish the specified work, shall meet all applicable safety regulations.

4.6.17.4 Transportation Equipment: Transportation equipment as required, shall be suitable for loading, temporary storage, transport, and unloading of contaminated waste without exposure to persons or property.

4.6.17.5 Vacuum Equipment: All vacuum equipment utilized in the work area shall utilize HEPA filtration systems. Do not use any methods that would raise dust such as dry sweeping or vacuuming with equipment not equipped with HEPA filters.

1H 041850

4.6.17.6 Water Sprayer: The water sprayer shall be an airless or other low pressure sprayer for amended water application.

4.6.17.7 Other Tools and Equipment: The CONTRACTOR shall provide other suitable tools for the stripping, removal, encapsulation and disposal activities including but not limited to: hand-held scrappers, brushes, sponges, rounded edge shovels, brooms, and carts.

4.6.18 PRE-ASBESTOS ABATEMENT PREPARATIONS:

4.6.18.1 Prior to any abatement work in an area, seal off the entire area to anybody other than trained personnel and authorized visitors. Errect signs around the perimeter in accordance with EPA, OSHA and this specification. Provide security against unauthorized entry during abatement process. Maintain a log of all people entering and exiting the workplace.

4.6.18.2 Seal all walls with one layer of 4-mil plastic sheet and the ground floors with 6-mil plastic sheets. For asbestos containing materials within buildings, seal off all duct openings, doors, windows, fan coil units, radiators, etc., with 4-mil

plastic. Ensure the barriers are effectively sealed and taped. Repair damaged barriers and remedy defects immediately and visually inspect enclosures prior to each workday. Use smoke methods to test effectiveness of barriers.

4.6.18.3 Secure the approval of the Project Manager prior to the start of the work for the following: Enclosures, showers and toilets, personnel protection and decontamination procedures, exposure control systems, notifications and permits, standard operating procedures, personnel training and testing, removable decontamination and storage, sealing off and securing of the work area and equipment for inter-room communications.

4.6.19 UTILITIES

4.6.19.1 Provide all necessary connections for temporary utilities in the workplace during abatement work. Preserve in operating condition all active ducts, piping and utilities. If any of the above will be disturbed, notify the Project Manager immediately and undertake remedial action as required. Shut down and disconnect all electric power to the work area, if required, so that there is no possibility of reactivation and electrical shock during the entire abatement process.

4.6.19.1.1 Ensure safe installation (including ground fault interrupters) of temporary power sources and equipment by compliance with all applicable electrical code requirements and OSHA requirement for temporary electrical systems.

4.6.19.1.2 The temporary electrical power shall be in accordance with OSHA and Electrical Code for Wet Environment.

4.6.19.2 Remove all heating, ventilating and air conditioning system filters and dispose of as asbestos waste. Replace all filters with a set of new filters at the end of the decontamination work.

4.6.20 ASBESTOS REMOVAL:

4.6.20.1 Except as noted herein and/or in drawings, spray with water, which contains a wetting agent, all asbestos that is to be removed. The wetting agent shall be 50 percent polyoxyethylene ether and 50 percent polyoxyethylene ester, or the equivalent, mixed one ounce to five gallons of water. Apply a low pressure fine spray of the amended water to minimize fiber release. Saturate sufficiently the material throughout the removal process so that

there will be at no time of removal fiber release from dry asbestos. In many areas, it may be necessary to presaturate asbestos materials the day prior to removal.

4.6.20.2 Immediately following removal, the wetted asbestos shall be packed into labeled 6-mil plastic bags to prevent the material from drying. Pack and seal all bagged material in drums which are also labeled. Thoroughly clean the exterior of the sealed drums prior to loading on the truck for transportation to the landfill.

4.6.20.3 Disposal shall be in a landfill, meeting EPA requirements. Do not throw bags into landfills in a way that may cause the bags to burst open. Ensure that bags are not broken open in the process.

4.6.21 CLEANING AND DECONTAMINATION:

4.6.21.1 Remove and place in containers all visible accumulations of asbestos-containing material and asbestos-contaminated debris utilizing rubber dust pans and rubber squeegees to move material about. Do not use metal shovels to pick up or move accumulated waste. Special care shall be taken to minimize damage to floor sheeting.

4.6.21.2 Wet clean all surfaces in the work area using rags, mops and sponges as appropriate.

4.6.21.3 Remove the cleaned outer layer of plastic sheeting from walls and floors. (This applies to removal within buildings only.) Windows, doors, HVAC system vents and all other openings shall remain sealed. The negative pressure ventilation units shall remain in place and be utilized.

4.6.21.4 After cleaning the work area, wait at least 24 hours to allow fibers to settle, and HEPA vacuum and wet clean all objects and surfaces in the work area again.

1H 041855

4.6.21.5 Remove all waste in containers from the work area through the load-out Air Lock.

4.6.21.6 Decontaminate all tools and equipment and remove at the appropriate time in the cleaning sequence.

4.6.21.7 Inspect the work area for visible residue. If any accumulation of residue is observed, it will be assumed to be asbestos and the 24-hour settling period/cleaning cycle repeated.

4.6.21.8 After the work area has been rendered free of visible residue, a thin coat of a satisfactory lockdown agent shall be applied to all surfaces in the work area including structural members, building components and plastic sheeting on walls, floors, and covering nonremovable items, to seal in nonvisible residue. The lock-down agent shall be tinted to ensure full coverage.

4.6.22 RE-ESTABLISHMENT OF THE WORK AREA AND SYSTEMS:

4.6.22.1 Re-establishment of the work area shall only occur following the completion of clean-up procedures and after clearance air monitoring has been performed and documented.

1H 041856

4.6.22.3 The CONTRACTOR shall notify the project manager for a visual inspection of the work area for any remaining visible residue. Evidence of contamination will necessitate additional cleaning requirements.

4.6.22.4 Additional air monitoring shall be performed if additional cleanup is necessary.

4.6.22.5 Following satisfactory clearance of the work area, remaining polyethylene barriers may be removed and disposed of as asbestos-contaminated waste.

4.6.22.6 Remove contaminated HVAC system filters and dispose of as asbestos-contaminated waste. Decontaminate filter assemblies using HEPA vacuums and wet cleaning techniques.

4.6.22.7 Items to be salvaged must be properly decontaminated.

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SECTION III
PERTINENT REGULATIONS - ASBESTOS

TABLE OF CONTENTS

ATTACHMENT 3

THIS IS A LIST OF COMPANIES WHICH HAVE INDICATED AN INTEREST IN CONDUCTING ASBESTOS ABATEMENT WORK. THIS LIST DOES NOT CONTAIN ALL COMPANIES AND IT DOES NOT INDICATE ANY TYPE OF EPA APPROVAL.

TEXAS

A-1 Specialties
P. O. Box 477
Gatesville, Texas 76528
James Lanham
(817) 865-7922

American Tex-Seal, Inc.
218 Beasley Street
Sulphur Springs, Texas 75482
Danny Blount

Artic Insulation Company
4201 Lindberg
P. O. Box 864
Addison, Texas 75001
(214) 385-7652

Asbestos Removal, Inc.
P. O. Box 9386
Odessa, Texas 79767
(915) 362-0711

USI and Associates
408 N. Bowser #100
Richardson, Texas 75081
(214) 783-8353/231-9035

Basin Insulation Service
1301 Jarvis
Lubbock, Texas 79408
(806) 795-9706

B.M.S. Technology Inc.
1 Summit Avenue
Suite 202
Ft. Worth, Texas 76102
(817) 926-5296

Environ-Control Inc.
7878 Growlane
Houston, Texas 77040

Building Specialties, Inc.
P. O. Box 920837
6230 Bingle
Houston, Texas 77292-0837
(713) 939-1115

Pro-Kote Inc.
P.O. Box 1416
Roundrock, Texas 78680
(512) 244-9186

Clean-America, Inc.
5200 Mitchelldale
Houston, Texas 77092
Larry D. Jones, Pres.
(713) 686-2103

Costal Environmental Control
P. O. Box 1277
La Marque, Texas 77568
Alan Dodd
(409) 945-8077

Continental Coatings, Inc.
P.O. Box 3000
La Porte, Texas 77571
(713) 471-8580

Ramzel-Waddell Inc.
P.O. Box 180383
Austin, Texas 78718
(512) 251-2637

REVISED: 3/19/87

SWRf/Asbestos 6499

Fire Safe of Houston, Inc.
16203 Park Row
Houston, Texas 77084
Don Sabrsula
(713) 578-0595

Gregg Industrial Insulators Inc.
P. O. Box 1887
Kilgore, Texas 75662
David Brooks

Bill Kittrell Acoustics Inc.
2017 Stephenson Drive
Mesquite, Texas 75149
(214) 288-0754
Steve Kittrell

I.C.E., Inc.
Insulation Specialists
P.O. Box 2482
Conroe, Texas 77305
A. T. (Jack) Cain
(409) 760-2550

Latin American Construction Co.
6115 Denton Drive
Dallas, Texas 75235
(214) 956-7903

W. T. Stephens, Contracting Inc.
1400 Post Oak Blvd., Suite 750
Houston, Texas 77056
Cody Birdwell
(713) 965-9324

Little-Tex Insulation Co., Inc.
911 N. Frio Street
San Antonio, Texas 78207
Olin A. Warnick, President
(512) 222-8094

B.C.P. Construction Inc.
Asbestos Abatement Contractors
712 No. Beach Street
Fort Worth, Texas 76111
(817) 429-475-5801

South Texas Insulation Co.
200 Seguin Street
San Antonio, Texas 78208
Joseph M. Dawson
(512) 226-5480

Texas Insulators, Inc.
4623 Steffani
Houston, Texas 77041
Ron Van Guilder, Pres.
(713) 466-6717

Sublett & Associates
4623 Steffani
Houston, Texas 77041
(713) 466-6717

Contracting Specialist Inc.
P. O. Box 300586
Houston, Texas 77230-0586
(713) 741-7069

U.S. Asbestos Abatement, Inc.
10543 Doric Street
P.O. Box 20880
Dallas, Texas 75220
Charles W. Jordan
(214) 357-2740

Abatement Associates
504 Danny Drive
Desoto, Texas 75115
(214) 223-1749

Best Renovating Company
H. C. Flynn
6212 Samuel Blvd.
Dallas, Texas 75228
(214) 324-4373

Thuro-Care Systems, Inc.
1201 1/2 East Tyler
Harlingen, Texas 78550
O.A. Knight Jr., Pres.
(512) 425-2277

Pico Inc.
Rt. 3 P.O. Box 140
Tuttle, Oklahoma 73089
(405) 381-3821

Little-Tex Insulation Co., Inc.
911 N. Frio Street
San Antonio, Texas 78207
Olin A. Warnick, President
(512) 222-8094

Triangle Plastering Co., Inc.
P. O. Box 38325
Dallas, Texas 75238
Bob Baker
(214) 285-8976

Power Masters, Inc.
625 Howard Avenue
Deer Park, Texas 77536
P.O. Box 778
(713) 930-1400

Tri-Pro Services, Inc.
P.O. Box 271
Kaufman, Texas 75142
Horace Crow, A.I.A.
(214) 932-4351

USI and Associates
408 East Broadway
Pond Creek, Oklahoma 73766
(405) 532-4272

Win-Way, Inc.
P. O. Box Drawer GG
Freeport, Texas 77541
(713) 393-1272

By States in Region VI

LOUISIANA

Reynolds Contracting
Asbestos Control
141 E. Boyd Street Suite 405
Baton Rouge, Louisiana 70808
Mark Reynolds, President
(504) 767-4164

Richard Construction Co. Inc.
18744 Keystone
Greenwell Springs, Louisiana 70739
Rob Richard
(504) 261-8196

Insul - Tech
P.O. Box 98
Harvey, Louisiana 70059
(504) 362-1550

Louisiana Insulation & Fireproofing Inc.
18744 Keystone
Greenwell Springs, Louisiana 70739
(504) 261-8196

NEW MEXICO

Keers, Environmental
3323 Stanford Drive N.E.
P.O. Box 6848
Albuquerque, New Mexico 87197
(505) 888-9525

BCP Corporation
2432 West Peoria, Suite 1205
Phoenix, Arizona 85029
(602) 861-9205

ARKANSAS

Custom Insulation Co., Inc.
2811 Miramar Street
Pine Bluff, Arkansas 71611
(501) 534-8850

J. W. Construction Co.
916 Garland Avenue
Little Rock, Arkansas 72201

Mid-Ark Fireproofing & Insulation, Inc.
P. O. Box 9682
Little Rock, Arkansas 72219
(501) 888-6063

OKLAHOMA

The McIntosh Co., Inc.
1402 S. 69th E. Ave.
Tulsa, Oklahoma 74112
(918) 836-0301

PICO Inc.
Rt. 3 P.O. Box 140
Tuttle, Oklahoma 73089
(405) 381-3821

Nationwide Asbestos Abatement Serv.
710 North Peoria
Tulsa, Oklahoma 74106
Lamar L. Anderson
(918) 587-4176

Sublett Associates
100 N.E. 26th
Oklahoma City, Oklahoma 73105
(405) 528-6365

Pettus Construction Co. Inc.
P.O. Box 6
Tulsa, OK 73754
(405) 796-2400

U.S. Pollution Control, Inc.
2000 Classen Center
Suite 400 South
Oklahoma City, Oklahoma 73106
(405) 528-8371

U S I and Associates
408 E. Broadway
Pond Creek, Oklahoma 73766
George A. McCutchan
(405) 532-4272

OUT OF REGION VI

A-1 Disposal Corporation
P. O. Box 248
400 Broad Street
Plainwell, Michigan 49080
(616) 685-9801

Aaxon Industrial, Inc.
1043 Rt. One
Avenel, New Jersey 07001
Linda Paulin
(201) 636-1581

Asbestos Containment Corporation
P. O. Box 229
Watervilt, New York 12189
Arthur H. Cody, President
(518) 273-4685

Mechnical Asbestos Removal, Inc
2436 Cockeysville Road
Cockeysville, Maryland 21030
Richard D. Ehrlich
(301) 785-2525

Control Resources Corporation
P. O. Box R
Michigan City, Indiana 46360
R. Steven Lutterbach, President
(219) 872-4747

Midwest Materials Company
417 West Mill Street
P. O. Box 845 M. P. O.
Springfield, Missouri 65806
J. C. Goodin
(417) 862-3541

Midwest Asbestos Removal Service, Inc.
P.O. Box 933
Tinley Park, Illinois 60477
(312) 532-2244

Professional Asbestos Removal
1548 N. Barnes Avenue
Springfield, Missouri 65802
(417) 865-5628

Superior Systems, Inc.
3224 Twillman
St. Charles, Missouri 63301
Bob Canaday, President
(314) 946-0448

Thermo Spray Insulation, Ltd.
P. O. Box 18976
Memphis, Tennessee 38118
James R. Stewart
(901) 794-6060

B.C.P. Corporation
2432 W. Peoria, Suite 1205
Phoenix, Arizona 85029
(602) 861-9205