

INTRACOMpany CORRESPONDENCE

PLAINTIFF'S
EXHIBIT

RMC-455

Homer M. Cole - Ind. Hyg. & Tox., E-1-12

DALE A. DELISLE - MASSENA RED. PLANT

J. R. Amos, G-4-9; T. M. McCracken, E-L-2;

R. E. Benton - E-L-12

DATE
SUBJECT

February 2, 1990

SELECTION AND MONITORING OF
ASBESTOS REMOLITION/REMOVAL CONTRACTORS

As I indicated, we have been working on a procedure for selecting and auditing asbestos demolition/removal contractors (Draft enclosed). Should it be necessary to undertake asbestos removal projects at Massena prior to the issuance of the COM, it would be prudent to use the enclosed information in your selection/auditing process.

Tom McCracken is taking on responsibility for asbestos projects on a division basis. I suggest that you contact him for further guidelines.

Homer M. Cole
Homer M. Cole

HMC/mjm

Enc.

TX TNER
RMC0082036

**SUBJECT: SELECTION AND MONITORING OF ASBESTOS DEMOLITION/REMOVAL
CONTRACTORS**

GENERAL POLICY

It is Reynolds Metals Company's policy that all asbestos demolition/removal work performed at Company facilities strictly conform with applicable health and environmental laws and regulations. To ensure compliance with this policy, asbestos demolition/removal work at Company facilities is to be performed only by properly qualified asbestos demolition/removal contractors and all such work is to be monitored on a daily basis. This procedure outlines the steps to be followed by Company facilities in selecting an asbestos demolition/removal contractor and in monitoring the contractor's work performance.

SELECTION OF ASBESTOS DEMOLITION/REMOVAL CONTRACTORS

Pregualification

Only qualified contractors may be used to perform asbestos demolition/removal work at Company facilities. For purposes of this procedure, a contractor will be deemed to be qualified to perform asbestos demolition/removal work only if it is on the list of qualified asbestos abatement contractors developed and maintained by Corporate Industrial Hygiene. Qualified contractors

TX TNER
RMC0082037

must possess all required federal, state and local licenses and certifications and must have a demonstrated history of satisfactory performance in asbestos demolition/removal projects.

Corporate Industrial Hygiene will provide a copy of its list of qualified contractors (as well as any updated list) to the Corporate Purchasing Department for transmittal to all facility purchasing representatives. Facility purchasing representatives are to utilize this list whenever soliciting bids for asbestos demolition/removal contracts.

Only in emergency situations, where time is critical and a qualified asbestos demolition/removal contractor cannot be retained on a timely basis, may Company employees be utilized to perform asbestos demolition/ removal work. Even under these circumstances, only qualified individuals may be utilized, and the procedures outlined in the Industrial Hygiene Directive of July 27, 1988 must be followed. Copies of this directive are available from Corporate Industrial Hygiene.

To be deemed qualified, a Company employee must have successfully completed a ~~five day or longer~~ EPA-approved asbestos supervisor's course. Only in emergency situations, where qualified Company employees are not available to perform the work, may a contractor which has not been ^{pre}qualified by Corporate Industrial Hygiene be utilized to perform the work. *The contractor must, however, possess all necessary licenses and have at least five years experience in asbestos removal projects.*

- 2 -

and certifications

Bid Solicitations

The facility purchasing representative should solicit at least ____ bids for each asbestos demolition/removal project to be performed at the facility. The bids are to be solicited from qualified asbestos demolition/removal contractors. However, other contractors may also bid, provided that they promptly complete and return the Asbestos Demolition/Removal Contractor Performance Questionnaire described below. A copy should be promptly sent to Corporate Industrial Hygiene for its review, and it will advise the facility purchasing representative whether the contractor is qualified to perform the work.

The bid solicitation must set forth the scope of work in detail. The scope of work should include the type, amount and location of the asbestos, along with any additional relevant information regarding the project or the asbestos.

Before sending out the bid solicitation package, the facility purchasing representative should check with the Law Department attorney responsible for purchasing matters, to determine the proper contract document(s) to be used for the project. The bid solicitation package should include a copy of the contract document which the successful bidder will be required to sign.

Bidders should be advised to include with their bids any exceptions they propose to make to the contract terms. All proposed exceptions to the contract terms must be reviewed ^{by} ~~with~~ the Law Department before the contract is awarded.

The bid solicitation should require each bidder to submit the following documentation with its bid:

1. A completed Asbestos Demolition/Removal Contractor Performance Questionnaire (a copy of this ~~Questionnaire~~ ^{is} attached to this procedure as Exhibit A). A copy should then be forwarded to Corporate Industrial Hygiene for ^{its} ~~their~~ files. This questionnaire must be completed even if one was previously completed for another project.
 2. A completed Asbestos Demolition/Removal Contractor Work Plan Questionnaire describing how the asbestos demolition/removal will be done (a copy of this ~~Questionnaire~~ ^{is} attached to this procedure as Exhibit B).
 3. The bidder's detailed removal specifications for the project in question.
4. Documentation establishing that the bidder has obtained all required contractor, supervisor and worker licenses.

5. For each employee of the bidder who will be assigned to the project, documentation establishing that medical examinations have been performed within the last 12 months and indicating whether the physician detected a medical condition that would place the worker at an increased risk of material health impairment from exposure to asbestos.
6. For each employee of the bidder who would be placed at an increased risk of material health impairment from exposure to asbestos, (a) documentation establishing that the employee has been fit tested with negative pressure respirators within the last six months and (b) a physician's written opinion as to whether there are any limitations on the employee's use of respiratory protection.
7. Documentation establishing the competency of the employees of the bidder who will be collecting the air samples.
8. Documentation establishing the competency of analytical laboratory to be utilized by the bidder (per Appendix A of the OSHA Asbestos Standard).

Selection Of Contractor

The facility will select the asbestos demolition/removal contractor from those qualified bidders who submit all of the documentation identified above. However, before the contract is awarded, the successful bidder's proposed work plan ^{and the LMC Work Plan} must be reviewed to verify that it complies with all applicable federal, state and local laws and regulations applicable to asbestos demolition/removal projects.

This review is to be performed by either a qualified facility employee or by a qualified outside consultant. In order to be qualified to perform this review or to monitor the contractor's performance, the Company employee must have successfully completed a ⁿ ~~five day or longer~~ EPA-approved asbestos supervisor's course and the outside consultant must have been approved by Corporate Industrial Hygiene to review work plans and to monitor asbestos demolition/removal projects.

Corporate Industrial Hygiene will develop and maintain the list of qualified consultants and will provide a copy of this list (as well as a copy of any updated list) to the Corporate Purchasing Department for transmittal to all facility purchasing representatives. The Corporate Purchasing Department will also provide facility purchasing representatives with a list of those qualified consultants which have entered into blanket professional service agreements.

MONITORING OF THE ASBESTOS DEMOLITION/REMOVAL

CONTRACTOR'S PERFORMANCE

Daily Monitoring

The facility where the work is being performed is responsible for monitoring the contractor's performance to ensure that (a) it complies with all applicable federal, state and local laws and regulations pertaining to asbestos demolition/removal and (b) the approved work plan is being fully carried out. This monitoring is to be accomplished either by a qualified Company employee or by a qualified consultant.

Monitoring is to be performed on a daily basis and is to begin as soon as the asbestos demolition/removal project commences. Monitoring should occur at random times each day in order to limit the contractor's ability to predict when the monitoring will occur.

In some situations, it may not be possible to see clearly into the contractor's work area. Under these circumstances, the Company monitor should enter the work area in order to monitor the contractor's performance.

The Asbestos Demolition/Removal Contractor Performance Audit Report is to be completed each day by the Company monitor *or qualified consultant* during the course of the monitoring. This report, a copy of which is

attached to this procedure as Exhibit C, sets forth the specific items and areas to be checked by the Company monitor. Copies of the daily reports are to be forwarded to Corporate Industrial Hygiene on a weekly basis.

*contact the contractor's
representative to require the
contractor to*

The Company monitor should immediately stop any work practice or situation (such as a breach in a containment barrier, inadequate worker decontamination or a breakdown of the negative air machines) which could result in the release of asbestos fibers into the workplace or environment. The contractor should be required to immediately correct any such practice or situation, and the work should not be permitted to resume until the practice or situation has been corrected to the Company monitor's satisfaction.

All such incidences are to be reported in writing to Corporate Industrial Hygiene as soon as possible after the situation has been resolved. If there are any questions as to whether a project should be stopped, the Company monitor should immediately contact Corporate Industrial Hygiene for further guidance.

Air Samples

The Company monitor must collect at least two air samples daily. The samples are to be collected outside the containment room--one sample at the entrance to the clean room and another sample at the exhaust of the negative air machines. In addition,

if a regulated area has been established, at least one air sample is to be collected daily at the boundary between the regulated area and the normal work area.

*contact the contractor
and inform the contractor to
stop work if the contractor is*

If any air sample reveals asbestos levels at or above 0.1 f/cc, the Company monitor should immediately stop the demolition/removal work, ^{The monitor should} and then review the contractor's work practices with the contractor. The contractor's work practices must be modified in order to reduce asbestos levels to less than 0.1 f/cc.

Final Inspection

After the asbestos demolition/removal project (including final cleanup) has been completed, the Company monitor should conduct a visual inspection of the work area. The inspection should take place before final clearance air sampling. The inspection should include entry into the work area to check for visual contamination on surfaces from which asbestos-containing material has been removed.

Additionally, the Company monitor should inspect for any asbestos or asbestos-containing material which may have been "caught" on equipment or other surfaces. ~~A high intensity flash light should be used for inspecting corners and other recessed areas.~~

Once the work area has passed visual inspection, the Company monitor should perform the final clearance air sampling. The project will be deemed to be complete when aggressive air sampling shows airborne asbestos levels of 0.01 f/cc or less.

If there are any questions concerning the daily monitoring or final inspection, the Company monitor should promptly consult with Corporate Industrial Hygiene.

bjm
purch
asbestos
rmc/policy

DRAFT

This "Asbestos Abatement Contractor Questionnaire" should be filled out and submitted by all contractors each time they bid on an asbestos abatement project. In this way, we can insure that our files are kept up to date.

If you have any questions, please contact Corporate Industrial Hygiene.

ASBESTOS ABATEMENT CONTRACTOR PERFORMANCE QUESTIONNAIRE
(Use back of form, if more space needed)

Company Name:

Address

Contact Person:

Telephone: ()/

1) Are you currently licensed by any regulatory or governmental agency for the purpose of handling asbestos materials, e. g., removal, encapsulation, enclosure, demolition, etc.? No ☐ Yes ☐ If Yes, please list.

2) Are you currently licensed by the state in which the project is located? No ☐ Yes ☐ If Yes, provide a copy of the license.

3) List 3 previous asbestos abatement projects which you have completed. Include a brief description of each project, the name and telephone number of the owner or contact person.

4) Have you completed any removal projects involving asbestos containing thermal system insulation? Yes ☐ No ☐ If Yes, please describe.

5) Has your company or any of your companies ever been cited by a federal, state, or local regulatory agency, relating to asbestos notifications or abatement activity, including deficient notices? No ☐ Yes ☐ If Yes, please describe.

6) Has your company or any of your companies' principals ever incurred penalties for non-compliance with an asbestos abatement project's specifications, including but not limited to liquidated damages or overruns in scheduled time limitations and resolutions or noncompliance with the work practice standards of 40 C.F.R. Part 61, Subpart M? No ☐ Yes ☐ If Yes, please list all penalties and describe the circumstances.

7) Has your company or any of your companies ever been involved in an asbestos abatement project which was terminated prior to completion? No ☐ Yes ☐ If Yes, please describe.

ASBESTOS ABATEMENT CONTRACTOR PERFORMANCE QUESTIONNAIRE
PAGE 2

8) Has there been any asbestos-related state or federal legal proceeding/
claim in which your company has participated or is currently involved?
No _____ Yes _____ If Yes, please describe. _____

9) Does your company carry liability insurance? No _____ Yes _____ If
Yes, please describe the coverage. _____

10) How long has your company been involved in asbestos abatement
activities? _____

11) Have all of your employees who are involved in asbestos abatement
projects successfully completed an EPA approved training or refresher
course on asbestos abatement within the past 12 months? Yes _____ No _____
Please name the training group and location where the training took
place. _____

I certify that the above statements are true to the best of my knowledge.

Date:

Signature _____

Title _____

ASBESTOS ABATEMENT CONTRACTOR WORK PLAN QUESTIONNAIRE

This completed form must accompany your submittal. All negative responses must be explained. Any additional information that you would like to submit can be attached to this document.

I. Work Area Preparation

Will preparation of work area be necessary? If yes, answer remaining questions. If no, please explain and proceed to Section II.

Will caution signs be posted and banner tape be established in such a way to prevent accidental or unauthorized entrance?

Will the electrical power and HVAC system in the area be shut down?

Will sanitary facilities and eating areas be provided outside regulated areas?

Will all movable objects be wet wiped or HEPA vacuumed prior to removal from work area?

Will all nonmovable objects be wet wiped or HEPA vacuumed prior to being covered with a 4 mil. poly?

Will all surfaces be wet wiped or HEPA vacuumed prior to covering with poly?

Will all windows, doors, elevator openings, ducts, grill openings and any other openings between the work area and uncontaminated areas outside the work area be covered with 4 mil. poly?

II. Containment Room

Will a containment room be used? If yes, answer the remaining questions. If no, please explain and proceed to Section III.

Will floors be covered with at least two layers of 6 mil. poly?

Will walls be covered with at least 2 layers of 4 mil. poly?

Will seams be located in such a fashion as to minimize the number and be no closer than six feet?

Will floor poly extend at least 12" up the sidewalls?

Will wall poly overlap floor poly by at least 12" beyond wall/floor joint?

Will wall poly be adequately secured to prevent pulling away from wall?

Will walls be constructed for the containment room (openings greater than 4' x 8'), will the framing consist of wood or metal?

Will 3/8" plywood or sheathing be used on the work side of openings greater than 4' x 8'?

Will negative air machine(s) be used to maintain negative pressure inside enclosure?

Will checks be made to insure negative pressure is maintained inside the enclosure (smoke tubes or 0.01" water gauge difference between inside and outside)?

Will the negative air machines be of the centrifugal type?

Will the negative air machines have an air-handling capacity of 1,000 - 2,000 ft.³/min. under clean filter conditions?

Will there be at least 4 air changes per hour?

Will the negative air machine(s) be located so as to insure that clean outside air is brought in through the decon unit and thru the work area before being exhausted to the outside?

Will the negative air machines be equipped with the necessary filters (prefilter, intermediate filter, and HEPA filter)?

Will the filter(s) be replaced as necessary or when the pressure drop reading exceeds 1" water gauge?

Will the contaminated filters be properly disposed of as asbestos-containing material?

III. Decontamination Facility/Area

Will a decontamination (decon) facility be necessary? If yes, answer remaining questions. If no, please explain and proceed to Section IV.

Will the decon facility be a prefab unit?

For the decon facility, will there be an airlock between the equipment room and shower room and the shower room and clean room?

Will the air locks be formed by overlapping two sheets of poly at the exit and entrance ends?

Are the air locks formed by overlapping two sheets of poly at the exit and entrance ends?

Will there be at least three feet of space between the entrance and exit?

Will 2 layer 6 mil. opaque or white poly be used for the decon unit walls?

Will 1/4" - 1/2" plywood be used for the decon unit walls?

Will three layers of 6 mil. poly be used for the decon floors?

Will the water from the shower room filtered be through a 0.5 - 1.0 micron filter prior to discharge?

Will the decon facility be designed so that entrance and egress to the work area is through the decon unit?

Will emergency exits be established and clearly marked?

If decon area is used, will workers be required to decontaminate themselves in that area before leaving?

IV. Waste Container Load Out

Will a waste container load-out be necessary? If yes, answer remaining questions. If no, please explain and proceed to Section V.

Will waste container load-out facility be constructed with appropriate air locks?

Will the waste container load-out unit be maintained under negative pressure?

V. Glove Bag

Will glove bag procedures be used? If yes, answer remaining questions. If no, proceed to Section VI.

Will the glove bags be constructed of at least 6 mil. poly?

Will the glove bags be checked for tightness (smoke tube or squeeze test) prior to beginning removal of ACM?

Will amended water be used to keep ACM wet?
Will HEPA vacuum cleaner be used to deflate bag after removal?

Will the remaining surfaces be cleaned at least twice after ACM removed?

Will lock-down spray back material be used to seal any remaining fibers?

Will the glove bag be properly labeled for disposal?

VI. Open Air Removal

Will it be necessary to utilize "open air" removal techniques? If yes, answer remaining questions. If no, please explain and proceed to Section VII.

Will a regulated area be established based on valid air sampling data?

Will the ACM be kept thoroughly wet during entire removal process?

Will the ACM be allowed to drop from surface to floor or other surface?

Will the ACM be wrapped with 6 mil. poly prior to removal?

Will other procedures be used to minimize release of fibers? If yes, please elaborate on back.

Will 6 mil. poly be placed underneath ACM being removed or repaired?

VII. Waste Disposal

Will all waste be bagged wet?

Will there be any sweeping of AC waste?

Will waste be double bagged in labeled 6 mil. poly bags?

Will drums be used as a final storage container?

Will drums have locking rims?

If waste is not bagged or placed in drums, will it be double wrapped and seams taped with duct tape?

If not removed daily, will the bagged/drummed waste be stored in a secure location?

Will the outside of bags/drums be cleaned of all residue?

Will any waste with sharp edges be placed in the plastic bags?

VIII. Air Sampling

Will sampling be conducted by an outside third party?

Will sampling be conducted by trained personnel using required techniques?

Will fiber counts be performed by accredited laboratory?

Will preabatement sampling be conducted?

Will post abatement sampling be conducted using aggressive air sampling techniques?

Will at least 1200 liters of air be collected for pre and post abatement sampling?

Will daily area samples be collected inside the containment enclosure?

Will samples be collected using 25 mm filters at a flow rate of 0.5 - 2.5 liters per minute?

Will the area samples be collected at a frequency of 1 sample per 1000 ft.² of enclosed area with a maximum of 5 samples per work area?

Will at least 1 daily area sample be collected outside the enclosure, at the entrance to the clean room?

Will at least 1 daily area sample be collected outside the enclosure, at the exhaust of the HEPA ventilation system?

Will personal samples be collected daily and in such a fashion as to adequately characterize the exposure of each worker?

Will personal sampling be conducted for both the 8-hour time-weighted average and the 30-minute excursion limit?

Will air sampling pumps be calibrated before and after use with a representative filter?

IX. Respiratory Protection

Is there a written Respiratory Protection Program?

Does it contain all the elements of the OSHA required Respirator Program (1910.134)?

Will respirators be selected on the basis of air sampling data?

Will initial work be conducted with workers wearing atmosphere supplying respirators?

Does the training cover all types of respirators offered by you?

Will fit testing for air purifying respirators be performed initially and every six months?

Will all respirators be used during the project NIOSH/MISHA approved for asbestos exposures?

Does training adequately cover proper use, fit care and limitations of respirators?

Have employees been provided necessary medical exam to determine ability to wear respirators?

The designated Respirator Program administrator

is: _____

X. Clothing

Will protective clothing be necessary? If yes, answer remaining questions. If no, please explain and proceed to Section XI.

Will disposable full body suits be provided to workers?

Will the suits be removed prior to leaving the work area where there is no decon unit?

Will the suits be taped at cuffs and legs?

XI. Medical Surveillance

Has a medical surveillance program been established?

Does it include a physical exam (PFT, X-Ray, etc.)

Does it include the questionnaire contained in 1926.58?

Is physician's written opinion given to employees and available for inspection?

XII. Training

Is there documentation as to the type and level of training provided to workers?

Is there documentation as to the provider of training?

Does training cover health effects of asbestos?

Does training cover methods to recognize asbestos?

Does training cover relationship between asbestos and smoking?

Does training cover all aspects of 1926.58?

Does training cover proper work practices to control release of asbestos fibers?

Does training cover proper procedures for exiting work area through decon unit including donning and removal of protective clothing and respirators?

Does training cover procedures for emergency situations?

XIII. Emergency Situations

Are procedures included which cover duties and actions during emergencies (rupture of containment room, fire, medical)?

Will plant personnel be properly notified in a timely fashion?

Do you have a list of all applicable emergency response teams in the area?

Will a written report be sent to plant in event of emergency?

XIV. Site Security

Will work area be adequately cordoned off to prevent accidental or unauthorized entrance?

Will a daily log be kept of all entrances into work area?

Is plant management being notified immediately of any unauthorized entries into work area?

During off work hours, will work area be secured to prevent unauthorized entrance?

Will your personnel be kept on site during off work hours?

Will your personnel be available during off work hours?

For projects with decon units and containment barriers, will entry be restricted to the decon unit?

XV. Recordkeeping

Have adequate records been kept of employee training?

Have adequate records been kept of respirator training and fit testing?

Will adequate records be kept of air monitoring reports?

Have records been kept of medical surveillance?

Will adequate records be kept of emergencies?

Will a copy of all records, logs, and reports pertaining to the project be provided to plant at completion of project?

Will daily job progress reports be kept and submitted to plant management weekly?

The records custodian for this project will be:

_____.

The records will be maintained at:

_____.

Date _____ Signed _____

TITLE _____

DRAFT

The enclosed audit document is to be used only by properly trained personnel (i.e., have successfully completed an approved 5-day asbestos supervisor course) to audit the performance of asbestos abatement contractors. This qualified individual may be a Reynolds Metals Company in-plant person or an experienced outside person. The audit of the contractor's performance should be done daily and at random times. The appropriate sections of the audit document should be filled out at these times and copies forwarded to Corporate Industrial Hygiene on a weekly basis. For those projects where it is not possible to see clearly into the work area, it will be necessary to enter the work area to audit the contractor's performance.

Any work practice or situation which could result in the release of asbestos fibers into the workplace or environment (e.g. breach in containment barrier, inadequate worker decontamination, breakdown in negative air machines, etc.) must be stopped and corrected immediately. A report detailing this incident is to be prepared and sent to Corporate Industrial Hygiene in Richmond as soon as possible after the incident has been resolved. If there is any question concerning the need to stop a project, contact Corporate Industrial Hygiene immediately for guidance.

Once the asbestos project (and the final cleanup) has been completed, the trained individual must conduct a visual inspection of the work area prior to the beginning of the final clearance sampling. The inspection will require entrance into the work area. The individual inspecting the work area should look for visible contamination on all surfaces from which asbestos-containing material has been removed. In addition, he/she must look for material which might have been "caught" on equipment or other surfaces. A high intensity flashlight would be helpful for inspecting corners and other recessed areas.

Once the work area has passed the visual inspection, the final aggressive clearance sampling can be conducted. The project will be considered complete when the results of the aggressive air sampling indicate airborne asbestos levels are 0.01 f/cc or less.

Any questions concerning the use of this document should be directed to Corporate Industrial Hygiene.

ASBESTOS ABATEMENT CONTRACTOR PERFORMANCE AUDIT

I. Work Area Preparation

- Y/N Is preparation of work area necessary?
- Y/N Are caution signs posted and banner tape established in such a way to prevent accidental or unauthorized entrance? If yes, answer remaining questions. If no, proceed to Section II.
- Y/N Is the electrical power and HVAC system in the area shut down?
- Y/N Are sanitary facilities and eating areas being provided outside regulated areas?
- Y/N Are all movable objects being wet wiped or HEPA vacuumed prior to removal from work area?
- Y/N Are all nonmovable objects being wet wiped or HEPA vacuumed prior to being covered with a 4 mil. poly?
- Y/N Are all surfaces being wet wiped or HEPA vacuumed prior to covering with poly?
- Y/N Are all windows, doors, elevator openings, ducts, grill openings and any other openings between the work area and uncontaminated areas outside the work area being covered with 4 mil. poly?

II. Containment Room

- Y/N Is a containment room being used? If yes, answer the remaining questions. If no, proceed to Section III.
- Y/N Are floors covered with at least two layers of 6 mil. poly?
- Y/N Are walls covered with at least 2 layers of 4 mil. poly?
- Y/N Are seams located in such a fashion as to minimize the number and be no closer than six feet?
- Y/N Does floor poly extend at least 12" up the sidewalls?
- Y/N Does wall poly overlap floor poly by at least 12" beyond wall/floor joint?
- Y/N Is wall poly adequately secured to prevent pulling away from wall?
- Y/N Are walls constructed for the containment room (openings greater than 4' x 8'), will the framing consist of wood or metal?
- Y/N Is 3/8" plywood or sheathing being used on the work side of openings greater than 4' x 8'?
- Y/N Are checks being made to insure negative pressure is maintained inside the enclosure (smoke tubes or 0.01" water gauge difference between inside and outside)?
- Y/N Are negative air machine(s) used to maintain negative pressure inside enclosure?

- Y/N Are the negative air machines of the centrifugal type?
- Y/N Do the negative air machines have an air-handling capacity of 1,000 - 2,000 ft.³/min. under clean filter conditions?
- Y/N Are there at least 4 air changes per hour?
- Y/N Are the negative air machine(s) located so as to insure that clean outside air is brought in through the decon unit and thru the work area before being exhausted to the outside? (This check should be performed using ventilation smoke tubes.)
- Y/N Are the negative air machines equipped with the necessary filters (prefilter, intermediate filter, and HEPA filter)?
- Y/N Are the filter(s) replaced as necessary or when the pressure drop reading exceeds 1" water gauge?
- Y/N Are the contaminated filters properly disposed of as asbestos-containing material?

III. Decontamination Facility/Area

- Y/N Is a decontamination (decon) facility necessary? If yes, answer remaining questions. If no, proceed to Section IV.
- Y/N Is decon facility a prefab unit?
- Y/N For a decon facility, is there an airlock between the equipment room and shower room and the shower room and clean room?
- Y/N Are the air locks formed by overlapping two sheets of poly at the exit and entrance ends?

- Y/N Is there at least three feet of space between the entrance and exit?
- Y/N Are 2 layer 6 mil. opaque or white poly used for the decon unit walls?
- Y/N Is 1/4" - 1/2" plywood used for the decon unit walls?
- Y/N Are three layers of 6 mil. poly used for the decon floors?
- Y/N Is the water from the shower room filtered through a 0.5 - 1.0 micron filter prior to discharge?
- Y/N Is the decon facility designed so that entrance and egress to the work area is through the decon unit?
- Y/N Are emergency exits established and clearly marked?
- Y/N If decon area is used, are workers required to decontaminate themselves in that area before leaving?

IV. Waste Container Load Out

- Y/N Is a waste container load-out necessary? If yes, answer remaining questions. If no, proceed to Section V.
- Y/N Is waste container load-out facility constructed with appropriate air locks?
- Y/N Is waste container load-out unit maintained under negative pressure?

V. Glove Bag

- Y/N Are glove bag procedures being used? If yes, answer remaining questions. If no, proceed to Section VI.
- Y/N Are the glove bags at least 6 mil. poly?
- Y/N Are glove bags checked for tightness (smoke tube or squeeze test) prior to removal of ACM?
- Y/N Is amended water used to keep ACM wet?
- Y/N Is HEPA vacuum cleaner used to deflate bag after removal?
- Y/N Are the remaining surfaces cleaned at least twice after ACM removed?
- Y/N Is lock-down spray back material used to seal any remaining fibers?
- Y/N Is glove bag properly labeled for disposal?

VI. Open Air Removal

- Y/N Is it necessary to utilize "open air" removal techniques? If yes, answer remaining questions. If no, proceed to Section VII.
- Y/N Has a regulated area been established based on valid air sampling data?
- Y/N Is ACM kept thoroughly wet during entire removal process?
- Y/N Is ACM allowed to drop from surface to floor or other surface?
- Y/N Is the ACM wrapped with 6 mil. poly prior to removal?

Y/N Is 6 mil. poly placed underneath ACM being removed or repaired?

VII. Waste Disposal

Y/N Is all waste bagged wet?

Y/N Is there any sweeping of AC waste?

Y/N Is waste double bagged in labeled 6 mil. poly bags?

Y/N Are drums used as a final storage container?

Y/N Do drums have locking rims?

Y/N If waste is not bagged or placed in drums, is it double wrapped and seams taped with duct tape?

Y/N If not removed daily, is bagged/drummed waste stored in a secure location?

Y/N Is the outside of bags/drums cleaned of all residue?

Y/N Is any waste with sharp edges placed in plastic bags?

VIII. Air Sampling

Y/N Is sampling being conducted by an outside third party?

Y/N Is sampling being conducted by trained personnel using required techniques?

Y/N Are fiber counts performed by accredited laboratory?

Y/N Is preabatement sampling being conducted?

- Y/N Is post abatement sampling being conducted using aggressive air sampling techniques?
- Y/N Are at least 1200 liters of air being collected for pre and post abatement sampling?
- Y/N Are daily area samples being collected inside the containment enclosure?
- Y/N Are samples being collected using 25 mm filters at a flow rate of 0.5 - 2.5 liters per minute?
- Y/N Are the area samples at a collected frequency of 1 sample per 1000 ft.² of enclosed area with a maximum of 5 samples per work area?
- Y/N Is at least 1 daily area sample collected outside the enclosure, at the entrance to the clean room?
- Y/N Is at least 1 daily area sample collected outside the enclosure, at the exhaust of the HEPA ventilation system?
- Y/N Are personal samples collected daily and in such a fashion as to adequately characterize the exposure of each worker?
- Y/N Is personal sampling being conducted for both the 8-hour time-weighted average and the 30-minute excursion limit.
- Y/N Are air sampling pumps calibrated before and after use with a representative filter?

IX. Respiratory Protection

- Y/N Is there a written Respiratory Protection Program?
- Y/N Does it contain all the elements of the OSHA required Respirator Program (1910.134)?
- Y/N Are respirators selected on the basis of air sampling data?
- Y/N Is initial work being conducted with workers wearing atmosphere supplying respirators?
- Y/N Does the training cover all types of respirators offered by contractor?
- Y/N Is fit testing for air purifying respirators performed initially and every six months?
- Y/N Are all respirators used during the project NIOSH/MISHA approved for asbestos exposures?
- Y/N Does training adequately cover proper use, fit care and limitations of respirators?
- Y/N Are employees provided necessary medical exam to determine ability to wear respirators?
- Y/N Is there a designated Respirator Program administrator?

X. Clothing

- Y/N Is protective clothing necessary?
- Y/N Are disposable full body suits provided to workers?
- Y/N Are the suits to be removed prior to leaving the work area where there is no decon unit?
- Y/N Are the suits taped at cuffs and legs?

XI. Medical Surveillance

- Y/N Has a medical surveillance program been established?
- Y/N Does it include physical exam (PFT, X-Ray, etc.)
- Y/N Does it include questionnaire contained in 1926.58?
- Y/N Is physician's written opinion given to employees and available for inspection?

XII. Training

- Y/N Is there documentation as to the type and level of training provided to workers?
- Y/N Is there documentation as to the provider of training?
- Y/N Does training cover health effects of asbestos?
- Y/N Does training cover methods to recognize asbestos?
- Y/N Does training cover relationship between asbestos and smoking?
- Y/N Does training cover aspects of 1926.58?
- Y/N Does training cover proper work practices to control release of asbestos fibers?
- Y/N Does training cover proper procedures for exiting work area through decon unit including donning and removal of protective clothing and respirators?
- Y/N Does training cover procedures for emergency situations?

XIII. Emergency Situations

- Y/N Are procedures included which cover duties and actions during emergencies (rupture of containment room, fire, medical)?
- Y/N Are plant personnel being properly notified in a timely fashion?
- Y/N Does contractor have list of all applicable emergency response teams in the area?
- Y/N Is written report being sent to plant in event of emergency?

XIV. Site Security

- Y/N Is work area adequately cordoned off to prevent accidental or unauthorized entrance?
- Y/N Is daily log kept of all entrances into work area?
- Y/N Is plant management being notified immediately of any unauthorized entries into work area?
- Y/N During off work hours, will work area be secured to prevent unauthorized entrance?
- Y/N Are contractor personnel being on site during off work hours?

- Y/N Are contractor personnel available during off work hours?
- Y/N For projects with decon units and containment barriers, will entry be restricted to the decon unit?

XV. Recordkeeping

- Y/N Are adequate records being kept of employee training?
- Y/N Are adequate records being kept of respirator training and fit testing?
- Y/N Are adequate records being kept of air monitoring reports?
- Y/N Are adequate records being kept of medical surveillance?
- Y/N Are adequate records being kept of emergencies?
- Y/N Is a copy of all records, logs, and reports pertaining to the project being provided to plant at completion of project?
- Y/N Are daily job progress reports being kept and submitted to plant management weekly?

In addition to complying with applicable Federal, State, and local regulations, contractors will submit detailed specifications on the asbestos abatement project. These specifications must include information on the construction and operation of containment barriers, decontamination rooms, negative air, glove bags, and other work practices designed to minimize the release of asbestos fibers. Details of the sampling program and analytical laboratory accreditation and procedures for handling emergencies must also be included.

All sampling data and incidents must be reported daily to Corporate Industrial Hygiene. Contractors must also provide documentation on state licensing, supervisor and worker training, the respirator program, and medical surveillance.

Enclosed is an Asbestos Abatement Contractor Checklist that may be used as a guide in the development of the asbestos abatement specifications. This document will be used by our Corporate Industrial Hygiene staff when reviewing the specifications and should be considered minimum guidelines. Any specifications not fulfilling the above minimum requirements will result in the contractor being removed from the bidding list.

The asbestos abatement project will be considered complete when the results of the aggressive air sampling studies indicate airborne fiber levels of 0.01 f/cc or less.

Any questions concerning the use of this document should be directed to Corporate Industrial Hygiene.

TX TNER
RMC0082072