



Customer-Focused Solutions

June 1, 2005

05-0427

Christopher Alonge, P.E.  
NYS Department of Labor  
Engineering Services Unit  
State Campus Bldg. 12, Room 154  
Albany, NY 12240

**Subject: Variance Reopening Regarding File No. 05-0427; 130 Liberty Street, New York, NY**

Dear Mr. Alonge,

We respectfully submit the additional information regarding the referenced File No. for this project. Please note the following:

**Aggressive Clearance Air Sampling of Individual Floor(s) Within An Active Work Area Grouping**

Abatement is proposed to be conducted within a series of consecutive floors ("Work Area Grouping") concurrently. A decontamination unit ("decon") will be installed on the "cleared" floor immediately above the active Work Area Grouping and will be attached to the Work Area Grouping. Non-contaminated make-up air will be drawn from (a) cleaned vertical shafts and (b) through the attached decon from building areas, which have been previously cleaned and released, which exist outside the personnel decon and above the active Work Area Grouping. The top floor of the building will be addressed as provided below.

Clearance air monitoring may be performed on individual floors within the active Work Area Grouping as follows. The floor(s) to be cleared individually will be isolated from the balance of the Work Area Grouping at the completion of gross removal and gross clean-up within the floor(s) to be cleared. Airlock(s) with a minimum dimension of 3'x3' will be constructed at (a) the entrance to the clean vertical shaft on the isolated floor(s) and (b) at the entrance to the isolated floor(s) from the balance of the Work Area Grouping. Personnel proceeding to the isolated floor in the final cleaning stage shall don two suits within the personnel decon, and shall then remove their outer suit prior to entering the airlock at the entrance to the isolated work area that is in the final cleaning stage. Upon achieving satisfactory clearance air sampling results, the cleared floor shall be isolated from the balance of the Work Area Group.

**Entry/Exit to Asbestos Project Work Areas**

Entrance/egress from the active Work Area Grouping shall be through an attached decon located on the first clean floor above the active Work Area Grouping. The top floor of the building will be addressed as provided below.

Use of a remote personnel decon during Phase I will be limited to exterior work, interior negative pressure tent enclosures and disassembly of vertical shafts within two-layer tents. The following activities are proposed to be conducted utilizing remote personnel and waste decon units:

- Netting removal;
- Exterior façade cleanup;
- Exterior fireproofing removals;

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- Scaffold tie-ins, hoist tie-in installation, and crane tie-ins;
- Preliminary roof cleaning to establish a clean area for construction of a personnel decon on the roof for the balance of roof cleaning and for access/egress to the uppermost Work Area Grouping;
- Interior vertical shaft decon; and
- Creating waste decon access openings.

### **Sequencing Of Asbestos Project Work Within Shafts And Stairwells (Interior Vertical Shafts)**

#### **Clean Interior Shafts**

One or more interior vertical shafts may be maintained to provide “clean” make up air for clearance air monitoring of individual floors and movement of clean personnel and equipment during the project. The vertical shaft to be cleaned will be isolated from adjacent contaminated spaces. The interior surfaces and equipment of the “clean” vertical shaft shall be thoroughly HEPA vacuumed and wet-wiped prior to conducting aggressive TEM clearance air sampling. Clean make-up air will be provided from non-contaminated areas above or below the vertical shaft, as practicable.

Upon successful completion of clearance air sampling, the cleaned vertical shafts will be isolated from contaminated areas prior to and during active abatement and gross cleaning on each floor. At the completion of removal and gross clean-up, an airlock(s) with a minimum dimension of 3’x3’ will be constructed at the work area(s) entrance to the clean vertical shaft. Make-up air during the final clean-up stage and for clearance air monitoring for each isolated work area will be provided from the clean vertical shaft. Access/egress for abatement personnel through clean vertical shafts shall be limited to those areas where satisfactory clearance air monitoring results have been achieved.

Only properly packaged and labeled waste or personnel moving between clean areas shall be transported within clean vertical shafts. Use of cleaned vertical shafts by abatement personnel shall be limited to access between clean areas only. Bulk waste material containers shall not be transported through these cleaned vertical shafts.

#### **Contaminated Interior Shafts**

One or more contaminated interior vertical shafts may be maintained to provide for transport of (a) containerized waste from the active abatement area to the waste re-packaging area and/or (b) properly packaged waste to the waste decon for final packaging prior to transport from site. The contaminated interior shafts will be isolated from any floor within the active Work Area Grouping where gross removal and gross cleaning has been completed. The contaminated interior vertical shaft shall remain isolated from all cleaned areas and non-active abatement areas. A curtained doorway shall be constructed at the lowest point of egress from the interior contaminated vertical shaft. The curtained doorway shall be connected by a two layer poly tunnel to the waste re-packaging area. A by-pass area for properly packaged and labeled asbestos waste may be installed within the waste re-packaging area leading directly to the waste decon attached to the waste re-packaging area. Bulk packaged material or waste not packaged for final disposal shall be brought through the tunnel into the waste re-packaging area for final packaging and labeling. The waste re-packaging area, tunnel and waste decon shall be maintained under negative pressure during the entire abatement project. At the completion of all abatement activities, the curtained doorway shall be cleaned, all surfaces within the waste re-packaging area, tunnel and waste decon shall be thoroughly cleaned using HEPA vacuuming and wet-wiping. At the completion of the first cleaning a visual inspection shall be performed to verify the work area is clean. The exposed interior layer of poly within the negative pressure work area shall be lightly misted with encapsulant. Encapsulant shall not be applied to any surfaces which have been the subject of abatement. Upon completion of a minimum four-hour settling/drying period the interior of the work area shall be inspected. If all surfaces are verified to be clean and dry, aggressive clearance sampling may be performed. Upon satisfactory completion of

aggressive clearance air sampling, the waste re-packaging area and tunnel may be disassembled and disposed of as asbestos waste. The curtained doorway shall be removed only when disassembly of the interior vertical shaft has been completed after successful air clearance sampling.

### **Disassembly of Clean and Contaminated Interior Vertical Shafts**

Clean vertical shafts which are of CMU construction shall remain sealed from contaminated areas and may remain in place for demolition and disposal as clean material during Phase II deconstruction.

Vertical shafts (both clean and contaminated) which are not CMU, will not necessarily be removed as part of the wall to wall gut conducted on each floor and may be maintained intact for use during cleanup of subsequent Work Area Groupings. Such vertical shafts shall be disassembled as follows.

A negative pressure tent consisting of two layers of six mil poly shall be constructed to enclose the area surrounding the section of the vertical shaft to be removed. The tent shall be sealed at the top and the bottom of the section of vertical interior shaft to be removed. The tent on each floor shall consist of four walls and a floor. The walls shall be attached directly to the underside of the metal ceiling deck. An airlock(s) with a minimum dimension of 3'x3' shall be constructed at each entrance to the negative pressure tent. Barrier tape and signage shall be placed surrounding the negative pressure tent at a minimum distance of twenty-five feet, where practicable. The interior of the negative pressure tent shall be considered the work area.

HEPA ventilation units shall be installed within the tent to maintain a minimum of six air changes per hour. Clean make-up air shall be provided to the tent from clean areas adjacent to the tent which have been previously cleared as part of the wall to wall gut on the balance of each floor. Where possible, negative ventilation units will be exhausted outdoors. However, negative ventilation units may be exhausted indoors into areas where satisfactory clearance air sampling has been achieved. Where HEPA ventilation units exhaust indoors, the primary unit shall be piggybacked into a second HEPA ventilation unit of equivalent capacity and the exhaust of the second unit shall be monitored. Barrier tape and signage shall be placed to enclose the interior exhaust point at a minimum distance of twenty-five feet, where practicable.

The personnel decon closest to the lowest elevation from which the shaft wall is being removed will serve as a remote decon for this activity. Personnel shall utilize a two suit method for access/egress to the negative pressure work area. Waste generated during the vertical shaft disassembly shall be properly packaged in a leak-tight waste container within the tent. The exterior surface of the leak-tight waste container shall be wet-wiped and placed into the airlock. Personnel in proper PPE who have not entered the work area shall enter and remain within the airlock during bag-out. These personnel shall properly place and seal the containerized waste within a second leak-tight container, wet-wipe the exterior of the second container and place the properly packaged waste outside the airlock for transport to the remote waste decon. Waste shall not be stored within the airlock. Upon completing gross removal and disassembly of the entire length of vertical shaft wall being removed, the entire negative pressure work area shall be cleaned using HEPA vacuuming and wet-wiping. The exposed interior layer of poly in the negative pressure tent shall be lightly misted with encapsulant. Encapsulant shall not be applied to any surfaces which have been the subject of abatement. Upon completion of a minimum four-hour settling/drying period the interior of the tent shall be inspected. If all surfaces are verified to be clean and dry, aggressive clearance sampling may be performed. Upon satisfactory completion of aggressive clearance air sampling, the tent may be disassembled and disposed of as asbestos waste.

### **Simultaneous Removal of Multiple Types of ACM within a Single Containment**

Removal of multiple types of ACM within a single containment shall follow the sequential order from the ceiling down and or from the most friable to least friable in each active abatement area per the Variance Decision File No. 05-0427. Multiple active abatement areas may exist simultaneously within a single

containment, however individual active abatement areas shall be separated by a minimum distance of fifty (50) feet (approximately equal to distance between two (2) columns).

### **Establishing and Releasing a Cleaned Area within the Contaminated Building Areas utilizing Interior Negative Pressure Tent Enclosures**

Interior Negative Pressure Tent Enclosures will be utilized to clean and release contaminated areas within the Building that cannot otherwise be included in the Interior Negative Pressurized Containment on a floor due to sequencing requirements. Procedures for establishing, cleaning, clearing and maintaining Negative Pressure Tent Enclosures are described below.

1. As the Negative Pressure Tent Enclosure will be installed within a contaminated area of the building, a Remote Personnel Decon Enclosure System, otherwise consistent with the requirements of ICR 56-9, shall be utilized.
2. If at any time a worker has to pass through an uncontaminated area to access the remote decon unit or the next work area, the worker wearing two suits of PPE shall remove one suit while in the work area, wet wipe the inner suit, don a clean outer suit and proceed either to the next work area or the decon unit.
3. Negative Pressure Tent Enclosures shall be constructed and used per the 05-0427 Variance Decision dated May 11, 2005 including but not limited to two layers of six mil fire-retardant polysheeting and shall include walls, ceiling and a floor (except for portions of floors, walls and ceilings that are removal surfaces) with double-folded seams. Interior tent areas will be constructed with an attached 3' x 3' airlock. Make-up air shall be provided to the airlock through HEPA-filtered interior air sources.
4. Personnel exiting the Negative Pressure Tent Enclosure shall proceed through the contaminated portion of the building to the Remote Personnel Decon Enclosure System.
5. Once tent enclosure work area preparation has been completed and abatement activities commence, on a daily basis and per work-shift, one air sample shall be collected within the tent enclosure entrance/exit. No other air samples associated with this work will be collected during the work exterior to the tent in the contaminated portions of the building.
6. Clearance air sampling inside the tent, per 05-0427 Variance Decision, will be conducted under static pressure conditions. No other clearance air samples associated with this work will be collected during the work exterior to the tent in the contaminated portions of the building. Upon completion of clearance air sampling, the tent shall be sealed airtight.
7. Upon receipt of successful clearance air sampling results, the tent enclosure will be maintained under a slight positive pressure utilizing HEPA-filtered supplied air to maintain its clean condition. Personnel entering the interior tent enclosures from a contaminated area shall proceed as follows:
  - Prior to entering the attached airlock, personnel shall remove the outer layer of protective clothing.
  - The exterior surface of the respirator shall be wet-wiped or HEPA vacuumed.
8. The opening to the exterior (if required) can then be established within the tent.
9. Once work is complete in the tent, isolation of the opening to the exterior shall be maintained by installation of isolation barriers or decon chamber.

### **Hoist/Scaffold Tie-Ins**

Tie-ins for the erection of any scaffold and hoist shall be performed by New York City Department of Environmental Protection ("NYCDEP") and New York State Department of Labor ("NYSDOL") asbestos certified handlers in a controlled manner as described below:

### **Tie-ins requiring Glass Panel Removal**

For tie-ins requiring the removal of sections of the curtain wall glass, the following procedures shall be required:

1. Existing exterior netting shall be removed as required following the procedures described herein.
2. The exterior of the glass to be removed to facilitate installation of tie-ins shall be cleaned per NYCDEP protocols as defined in the NYSDOL Variance Decision File No. 05-0427.
3. Prior to removal of glass, the interior tie-in attachment points shall be enclosed within an Interior Negative Pressure Tent Enclosure attached to the glass to be removed as described above. Negative Pressure Tent Enclosure shall be large enough to accommodate workers, equipment, glass and material removal and cleaning operations. All items within the tent shall be properly removed and surfaces cleaned. Each Negative Pressure Tent Enclosure shall be cleaned and cleared, including passing a visual inspection and clearance air sampling prior to creating the opening to the exterior.
4. Once the necessary tie-in connections are prepared, the opening to the exterior can be established and final connections made for the erection of the hoist or scaffold.
5. The abatement contractor shall then immediately seal the exterior opening with a rigid barrier covered by two layers of six-mil polyethylene sheeting with appropriate supports to ensure the barrier will remain in place until the completion of Phase I Deconstruction activities on the floor.

### **Tie-ins requiring Aluminum Panel Removal**

For tie-ins requiring the removal of sections of the curtain wall aluminum panels, the following procedures shall be required:

1. Existing exterior netting shall be removed as required following the procedures described herein.
2. The exterior of the aluminum panels to be removed to facilitate installation of tie-ins shall be cleaned per NYCDEP protocols as defined in the NYSDOL Variance Decision File No. 05-0427.
3. Prior to removal of aluminum panels, the interior tie-in attachment points shall be enclosed within an Interior Negative Pressure Tent Enclosure attached to the aluminum panels to be removed as described above. In addition, a Negative Pressure Tent Enclosure shall be constructed on a scaffold exterior to the building to enclose the aluminum panels to be removed. (Note a pilot study is to be proposed to attempt to obtain regulatory relief from the requirement for exterior enclosures for this work.) The Negative Pressure Tent Enclosure shall be large enough to accommodate workers, equipment, aluminum panels and material removal and cleaning operations. All items within the tent shall be properly removed and surfaces cleaned. Each Negative Pressure Tent Enclosure shall be cleaned and cleared, including passing a visual inspection and clearance air sampling prior to creating the opening to the exterior.
4. Once the necessary tie-in connections are prepared, the opening to the exterior can be established and final connections made for the erection of the hoist or scaffold.
5. The abatement contractor shall then immediately seal the exterior opening with a rigid barrier covered by two layers of six-mil polyethylene sheeting with appropriate supports to ensure the barrier will remain in place until the completion of Phase I Deconstruction activities on the floor.

### **Tie-ins Requiring Small Penetrations through Curtain Wall**

For tie-ins requiring small (less than six inch diameter) penetrations of the curtain wall utilizing manufacturer equipped HEPA-shrouded drilling/cutting equipment, the following procedures shall be required:

1. Access to the active work area on the scaffold will be restricted. The work area on the scaffold shall be cordoned off with barrier tape.
2. Only NYSDOL and NYCDEP certified asbestos workers shall be permitted within the work area.
3. The exterior of the impacted section of curtain wall to facilitate installation of tie-ins shall be cleaned per NYCDEP protocols as defined in the NYSDOL Variance Decision File No. 05-0427.

4. Drilling or cutting through asbestos-containing caulk on sections of aluminum column covers and fascia is not permitted unless work is performed within an exterior Negative Pressure Tent Enclosure. (Note a pilot study is to be proposed to attempt to obtain regulatory relief from the requirement for exterior enclosures for this work.)
5. Drilling or cutting through curtain wall to create a small penetration for installation of tie-in shall be accomplished with manufacturer equipped HEPA filtered and shrouded drilling/cutting equipment.
6. Polyethylene sheet or rubber mat shall be installed under the work area prior to start of work. Upon completion of creating small access point in curtain wall, connecting rod shall be inserted within penetration and penetration sealed and area HEPA vacuumed and/or wet-wiped.
7. Interior installation of tie-in shall occur within the building by properly certified NYSDOL and NYSDEP asbestos workers.

### **Netting Removal**

1. Existing building netting shall be removed as scaffold is erected.
2. Access to the active work area on the scaffold will be restricted. The work area on the scaffold shall be cordoned off with barrier tape.
3. Only NYSDOL and NYCDEP certified asbestos workers shall be permitted within the work area. The vacating of each work area and warning signs shall comply with ICR 56-8.1(b).
4. One layer of poly or rubber mat shall be installed on the scaffold work area floor.
5. Once the scaffold is prepared, the netting will be misted with an amended water solution prior to cutting and/or HEPA vacuumed (depending upon dust concentrations), then cut under wet conditions into manageable sections.
6. Removed netting will be properly bagged or wrapped in two (2) layers of poly in preparation for transportation and disposal as asbestos waste.
7. Once netting is removed, the exposed cables and tiebacks will be wet wiped, and thereafter may be removed as clean material. The cleaned cable or tiebacks may remain for removal during subsequent deconstruction.
8. If at any time a worker has to pass through an uncontaminated area to access the remote decon unit or the next work area, the worker shall don two suits of PPE, remove one suit while in the work area, wet wipe the inner suit, don a clean suit and proceed either to the next work area or the decon unit.

### **Exterior Negative Pressure Tent Enclosures**

Exterior Negative Pressure Tent Enclosures shall be utilized, as required, to clean and release contaminated areas exterior to the Building. Exterior negative pressure tent enclosure work areas shall be utilized to remove exposed exterior spray-on fireproofing ("SOFP"). The quantity of SOFP removed within a single negative pressure tent should be limited to removal of a maximum of approximately 160 square feet. For removal of exposed exterior SOFP, construction of multiple enclosures shall be required to ensure the quantity within a single tent does not exceed 160 square feet. Procedures for establishing, cleaning, clearing and maintaining Exterior Negative Pressure Tent Enclosures are described below.

1. The Negative Pressure Tent Enclosure will be installed exterior to the building on a scaffold system, a Remote Personnel Decon Enclosure System, otherwise consistent with the requirements of ICR 56-9, shall be utilized.
2. If at any time a worker has to pass through an uncontaminated area to access the remote decon unit or the next work area, the worker wearing two suits of PPE shall remove one suit while in the work area, wet wipe the inner suit, don a clean outer suit and proceed either to the next work area or the decon unit.

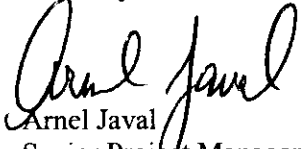
3. Negative Pressure Tent Enclosures shall be constructed and used per the 05-0427 Variance Decision dated May 11, 2005 including but not limited to two layers of six mil fire-retardant polyethylene sheeting and shall include walls, ceiling and a floor (except for portions of floors walls and ceilings that are removal surfaces) with double-folded seams. Exterior tents will be constructed with an attached 3'x 3' airlock. Make-up air shall be provided to the airlock through HEPA-filtered interior air sources.
4. Bulk removal of SOFP shall be performed using manual means (i.e., wet scraping) with local HEPA ventilation.
5. Upon completing the removal of SOFP, the surfaces from which SOFP have been removed and the interior surfaces of the tent will be thoroughly HEPA vacuumed and wet-wiped.
6. Personnel exiting the Negative Pressure Tent Enclosure shall proceed to the Remote Personnel Decon Enclosure System.
7. Once tent enclosure work area preparation has been completed and abatement activities commence, on a daily basis and per work-shift, one air sample shall be collected within the tent enclosure entrance/exit and exterior to the tent as required.
8. Clearance air sampling will be conducted inside the tent, prior to tent removal.

### **Roof, Façade and General Exterior Area Clean-up**

The roof, building façade and exterior areas requiring general clean-up will be cleaned as part of Phase I activities in accord with NYCDEP WTC Dust/Residue Roof & Façade Cleaning procedures provided in the NYSDOL Variance Decision File No. 05-0427, dated May 11, 2005.

As in the past, a copy of this letter is being provided to representatives of other interested regulatory agencies, as indicated below. If you have any questions please feel free to contact us at (212) 221-7822.

Sincerely,

  
Arnel Javal  
Senior Project Manager

cc: Robert Iulo (NYC DOB)  
Gil Gillen (USDOL/OSHA)  
Richard Fram (NYSDEC)  
Pat Evangelista (USEPA)  
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