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ATG Inc.
Work Plan
Radiological Remediation
of
Fort McClellan Hot Cell and Grounds
Anniston, AL

Prepared By:

Allied Technology Group, Inc.
1515 Main Street
Genoa, OH 43430

REFERENCE

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December, 1994

Fort McClellan
Remediation of Building 3192 and Hot Cell
Proposed Methods
November, 1994

ATG Inc.

Work Plan

Radiological Remediation

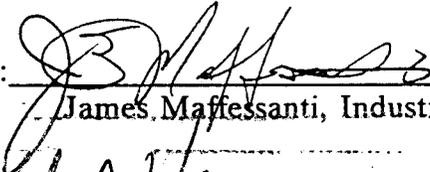
of

Fort McClellan Hot Cell and Grounds

Anniston, AL

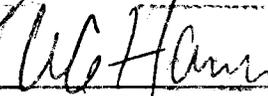
December, 1994

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1.0 TITLE

Allied Technology Group, Inc. (ATG) Detailed Work Plan for Fort McClellan - Building 3192, AMCCOM Project, Decontamination of Radioactive Materials Hot Cell work areas and facility grounds and components.

2.0 INTRODUCTION

This procedure details the removal of radioactive material from building materials, facility grounds, and facility structures. The materials are to be decontaminated and removed from the facility.

This plan proposes a method of remediation of the Building 3192 hot cell, building 3192, and surrounding grounds to NRC criterion for unconditional release. This entails removal of radioactive materials on the surface of and embedded into the surface of structures and piping systems.

Work on the characterization of the facility began Tuesday, November 1, 1994. Allied Technology Group, Inc. (ATG) management coordinated the project with Fort McClellan contacts for any problems that may be encountered.

3.0 PURPOSE

This plan describes the work methodology and radiological and occupational safety methods to be used while completing this work. Additionally, this plan describes the activities applicable to the removal of materials including the identification and packaging of the low-level radioactive waste removed. The radiological and occupational requirements of this plan are based on a preliminary assessment of potential hazards and may be reevaluated and modified with the concurrence of the ATG Corporate Health Physicist, or the Director of Remediation.

4.0 REFERENCES

4.1 U.S. Nuclear Regulatory Commission Division of Industrial and Medical Safety, "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material (August 1987)".

4.2 U.S. Army Technical Bulletin 43-0116, "Requisition, Handling, Storage, and Identification of Radioactive Material".

- 4.3 NUREG/CR 2082 "Monitoring for Compliance with Decommissioning Termination Survey Criteria".
- 4.4 NUREG/CR-5849 "Manual for Conducting Radiological Surveys in Support of License Termination", Draft June 1992.
- 4.5 U.S. Code of Federal Regulations, Title 10, "Energy".
- 4.6 U.S. Code of Federal Regulations, Title 29, "Labor".
- 4.7 U.S. Code of Federal Regulations, Title 40, "Protection of the Environment".
- 4.8 NUREG/CR 5512, "Residual Contamination from Decommissioning".
- 4.9 ATG Site Health and Safety Plan
- 4.10 NRC Reg Guide 1.86

5.0 SCOPE OF WORK

5.1 OSHA Site Health & Safety Plan (29 CFR 1910.120(b) (1)) This plan addresses the possibility of discovering isotopes not identified in the Scope of Work, technologically enhanced naturally occurring radionuclides such as ^{226}Ra and radionuclides regulated by the Nuclear Regulatory Commission. All personnel at the work site shall have passed the 40 hour basic and 24 hour site specific training and supervisory personnel shall have the 8 hour supervisory training as mandated by 29 CFR 19220.120. The plan shall require all personnel to provide evidence of current OSHA training (29 CFR 1910.120 (e) (6)) and medical certification (29 CFR 1910.120 (f)).

5.2 Project Schedule - The Project Schedule shall be dependent on the approval of the Project Detailed Work Procedure. When Allied Technology Group is notified that the work procedure has been approved, plans shall be implemented to transport personnel and equipment to the job site. For the purpose of this project schedule, Day 1 shall be the first day that personnel are on site at Fort McClellan.

6.0 RADIOLOGICAL CONTROL AND SAFETY PROGRAM

6.1 There was no indication of other than ^{60}Co in the facility. External gamma radiation surveys indicated a maximum of 290 micro-R/hour.

6.2 Surveys of the grounds outside the fenced area indicate no migration of activity from building 3192 grounds.

6.3 The surveys indicate in general that activity is located on and around the hot cell, its contents, and the shield door. The maximum level is on the crane components which have loose surface activity in the range of 100,000 dpm/100 cm².

6.4 All items which are removed from the facility shall require surveys to ensure there is no release of activity. These items, such as removable ceilings, piping systems (associated with clean water supply and gas supply), and removable fixtures shall be surveyed and removed prior to decontamination of the internal surfaces of the hot cell.

6.5 The shield plugs and shield shrouds shall be removed from their storage in the hot cell and packaged in plastic bags. These items shall be transferred to the decontamination trailer for removal of loose surface and fixed contamination, then surveyed for release as clean material if possible. The items of importance in this step are:

16 steel plugs within the hot cell - 2.5 ft x 6" dia.
Steel plate - 4' x 6' x 1"
16 plug shrouds (sleeves for plugs)

6.6 Paint and concrete from hot cell walls and floor has been sent for analysis of it's constituents. If there is lead in the paint, it shall be controlled separately from the waste generated from other operations.

6.7 The hot room table was removed from the cell and packaged during the characterization phase. This table is stainless steel and may be decontaminated and released as clean.

6.8 There are several items which may not be worthwhile to decontaminate due to the degree of contamination or their structure which may require significant disassembly time. These items are as follows:

Fixtures within the hot cell, crane components, window, etc.
Drain system and piping components
Electrical wiring and conduit.
Gas and water piping systems.
Hot room lights.

Cart wheels (small)
Wall plugs (4) 2 - 34" x 8" dia. 2 - 34" x 6" dia.

6.9 Many items will most likely be releasable after minimal decontamination which may be as simple as a brief wipedown. These items are as follows:

Ventilation system and components
Supply is approximately 350 square feet of surface area.
Return is approximately 280 square feet of surface area.

Piping systems from non-radioactive systems
heating, cooling, gas and water.
50' 2" pipe, 80' 1" pipe
Tank (2'x3'x1')
Gauges, pumps, valves, heater (2.5' dia x 8")
Bathroom sink
Miscellaneous fixtures and supply for shower area.

Hot room window and frame and detector system.
Hot room hatches for emergency escape.
Hot room door.
Light fixtures. Fluorescent (36), incandescent (5).
Roof trusses (length of building x 6" x 4)
Electrical boxes (11)
Hot cell control panel
Drinking fountain (cooler)
Vent grid (2'x3')

6.10 There will be radioactive waste created as a result of the remediation. An estimate is not practical at this time but materials which will most likely be waste are:

Concrete excavated from or around the drain pipes and shield shrouds.
Soil excavated from the outside areas where activity was found.
Materials which could not be decontaminated.

This may yield as much as 20 B-25 boxes (1800 cubic feet).

6.11 ATG and the Government's project personnel shall attend a project ALARA/Safety briefing provided by the Project Manager or designee and

documented prior to performance of the work. This briefing shall include radiological, occupational health and safety, and provide details of the work scope to be performed.

6.12 All personnel not currently qualified as radiation workers shall be given appropriate documented training in accordance with Reference 4.6, Appendix B of this plan and certified by the Radiological Controls Supervisor.

6.13 TLD's shall be issued to all project personnel before entry into the controlled area, any spaces controlled for radiation protection.

6.14 Documented Regulatory, ALARA, and Industrial Safety briefings shall be held in accordance with reference 4.5 and Appendix B of this plan prior to mobilization onsite.

6.15 A barrier shall be erected around all work areas and they shall be properly posted for both radiological and industrial safety considerations. In order to prevent spread of activity from the building and portable decontamination room, contamination control barriers shall be positioned at the entrances to the rooms of contamination concern. This shall consist of a step-off pad, rope, signs, and an undressing area with a waste barrel for disposal of decon materials and protective clothing.

6.16 Cognizant Base authorities (i.e., Base Security, Base RSO, etc.) shall be kept apprised of the project status during all phases of operation. The Project Supervisor shall document these verbal or written reports in the daily log book.

6.17 All outside storage of radioactive material shall be contained in weather-resistant material (at a minimum 10 mil polyethylene). Covering shall overlap the ground, and all edges of the covering shall be weighted or secured to prevent loss of the cover. The area of storage shall be posted as required in accordance with reference 4.5.

6.18 All building materials removed from the facility shall be labeled and segregated into discreet and identifiable piles and stored on-site.

6.19 All building materials removed from the facility shall be segregated until surveys are performed and written approval is obtained from the Army to release the material.

6.20 Release surveys of equipment shall include direct and removable beta/gamma radiation analysis. Release limits shall be as low as reasonably achievable, but shall in no case exceed the limits set forth in Reference 4.1, 4.3 and 4.8. Personnel monitoring shall be conducted using an Ludlum Model 3 ratemeter with a 44-9 probe or equivalent. Loose surface contamination smears shall be counted using an Ludlum Model 2929, 43-10-1 probe or equivalent.

6.21 A Radiation Work Permit (RWP) shall be initiated and approved by the Radiological Controls Supervisor for all job tasks conducted on-site. The RWP shall detail all radiological and safety requirements for a particular task.

6.22 All project personnel shall provide a 24 hour urinary void sample prior to project start-up, at the end of the project, and as directed by the Radiological Controls Supervisor. The exit sample shall be analyzed. The entry sample, however, shall require analysis only if the exit sample indicates the need.

6.23 If respiratory protection is required, all on-site personnel required to work in those areas shall be qualified and have a documented fit-test as required in accordance with Reference 4.9.

6.24 A swipe survey, for loose surface contamination, shall be performed and documented on any exposed surfaces of the containers. If any loose surface contamination is determined to exceed 1000 dpm/ 100 cm² beta/gamma or 20 dpm/100 cm² alpha, the exposed portions of the containers shall be enclosed with an appropriate contamination containment material (i.e., plastic bags), a probe survey performed of the ground areas adjacent to the containers and the Project Radiological Controls Supervisor immediately notified.

6.25 The following instruments (or equivalent) shall be calibrated and maintained in accordance with the manufacturers recommendations and shall be on-site for use during the project:

<u>Manufacturer</u>	<u>Instrument/Probe</u>	<u>Quantity</u>
Ludlum	Model 3/44-9	5
F & J	H-9400 Hi Vol Air Sampler	1
F & J	LV-1 Air Sampler	1
Ludlum	Model 3/43-65 (alpha probe)	2
Ludlum	Model 19 - Micro-R-Meter	3

7.0 DETAILED WORK PROCEDURE

All work shall be performed in a safe and conscientious manner. The work instructions and requirements of the ATG Health and Safety Plan and Work Plan for this project shall be reviewed with the work force prior to the start of work and shall be adhered to at all times while on the work site.

The physical condition of radioactive materials contained within building materials is solid and in a fixed or loose surface state on materials. Caution shall be used during the removal of these materials and in decontamination processes to prevent spreading radioactive materials from their position of encapsulation within the building materials. Should physical deterioration and spread of activity beyond the bounds of original work scope be observed, work shall stop and the condition of the facility shall be further assessed to determine if the removal methods specified in this document and plans for the work completion are adequate and appropriate.

No personnel entry into any posted work area is anticipated, nor permitted, by other than work crews or Army RSO personnel without prior approval of the ATG Project Manager or the Fort McClellan Radiation Safety Officer.

The radionuclides and concentrations that will be encountered are documented in the characterization surveys completed during the initial site evaluation. The surface survey of the site detected no significant sources of radiation other than surface contamination inside the hot cell, in the overhead, and in soil outside the facility. It is anticipated that drain lines from the facility also contain ⁶⁰Co activity and only dry low level radioactive wastes will be encountered. Good radiological work practices (contamination control and exposure minimization) shall be employed at all times.

Any radiological condition which is outside the scope of this work as defined in the Work Plan or this Detailed Work Procedure shall require the immediate notification of the Project Manager or Project Health Physicist and the immediate stoppage of work in progress. The AMCCOM Representative shall also be notified of the condition as soon as is practically possible.

7.1 Mobilization On-Site

7.1.1 Travel to site.

7.1.2 Meet with facility management for work plan briefing.

- 7.1.3 Set up on-site facilities (offices, etc.)
 - 7.1.4 Train personnel in radiological controls, industrial safety, the work plan, and procedural controls.
 - 7.1.5 Obtain entry bioassays and issue dosimetry.
 - 7.1.6 Conduct job briefing with AMCCOM, Base Environmental Restoration Division and ATG personnel.
 - 7.1.7 Obtain permission from base to begin decontamination.
 - 7.1.8 Electrician to evaluate facility for power tool use and determine need for outside power. The electrician shall verify the feasibility of using the electrical system in building 3192 for power tools.
 - 7.1.9 Coordinate with local Hospital for emergency services.
 - 7.1.10 A large laydown area should be established in the classroom by covering the floor with plastic. This area shall be controlled to prevent the spread of activity as items are surveyed for release as clean.
- 7.2 Preliminary Radiological Surveys and Sampling
- 7.2.1 The site characterization visit established pre-remediation surveys to establish the degree of control necessary during the remediation. Samples of contaminated materials from several locations were taken to identify the radionuclides of concern and the relative magnitude of activity in various areas. The samples taken were approximately 2000 grams in weight.
 - 7.2.2 The Project Supervisor shall determine the approximate dimensions for the work area. This determination will be based on requirements for equipment removal, laydown space for removed materials, space for waste containers, and personnel entry and egress. The area shall be posted as a "Radiologically Controlled Area" with the perimeter defined using boundary rope. The area utilized should be minimized for future release survey concerns.
 - 7.2.3 Any designated laydown areas should be covered with canvas, plastic or other appropriate material prior to use of the area to prevent cross

contamination of the laydown surfaces.

7.2.4 A "Step Off Pad" and frisker instrument (or equivalent) shall be established for personnel egress from the posted controlled area and shall be utilized at all times for that purpose.

7.2.5 Prior to commencing decontamination, a Sea-van with a decontamination area and HEPA ventilation will be moved to the site and provided electrical power.

7.3 Small Tasks and Work Preparation

7.3.1 Remove items, which are likely to be free of activity, from the building and survey for release as clean. This includes removal of the classroom fixtures and ceiling and disposal of insulation materials. A 100% survey of all chairs, lights, water fountain, electrical boxes, walls, flooring, and doors.

7.3.2 Remove the oil from the hot cell shield window into a 55 gallon drum. A sample of the oil should be taken and delivered to the base RSO for analysis prior to release of the oil. Remove the hot cell window and package the window for transfer to the decon trailer for cleaning and release if possible.

7.4 Decontamination of the Facility Hot Cell

7.4.1 Personnel shall ensure the work area is established and posted as directed above.

7.4.2 Remove all materials (piping systems, lights, and conduit) from the hot cell walls. Remove shields, shrouds, and steel plate from the hot cell using the hot cell crane. Package these items and transfer to the decontamination trailer for removal of activity, survey, and release if clean.

7.4.3 After removing all components, remove the crane assembly and package it for decontamination. Decontaminate the crane in the decon trailer practical to reduce the waste volume. Some items of the crane may not be practical to decontaminate, such as the cables. Use caution to prevent the spread of contamination from the crane surfaces as this is the most significant contamination in the facility. Remove all miscellaneous

items from the hot cell, water and gas piping and valves, radiation detector, lights, and miscellaneous wiring and conduit. Package these items and transfer to the decontamination trailer for decon and release if practical.

7.4.4 Establish an enclosed work area with negative ventilation from the cell window opening. The inlet to the cell shall be from the ventilation holes in the cell roof. Cover all other openings with plastic sheet to prevent escape of dusts created in the decon operation. High volume air samples shall be taken back to back in the hot cell during the entire decon operation. Low volume air samples shall be run in adjacent spaces.

7.4.5 Place the sponge blast unit inside the cell and prepare for decontamination by covering the door and window opening (except for the vent duct) with plastic sheet to prevent the escape of wall coverings and removed materials from the room. Conduct operational checks on the sponge blaster as described in its operating procedure. Use the sponge blaster to remove a 5' by 5' area of one of the open cell walls. Evaluate removal and discuss the results with the health physics supervisor prior to continuing. This will ensure appropriate communication of the machine operation and controls necessary to ensure contamination control. If the sponge-jet is not adequate to remove the wall surface, a mechanical scabber will be used for removal of the wall covering from the room wall surfaces. Control all removed materials as radioactive waste. Personnel not directly associated with support of the cell decon shall stand clear of, and outside of, the immediate work area.

7.4.6 Remove the crane rails and rail ties, decontaminate the cell walls, floor, and ceiling as possible using the sponge jet. If the sponge jet does not provide sufficient surface removal, use scabbling as necessary to remove contamination.

7.4.7 After removal of the wall covering, clean up the scrapings, and control as radioactive waste pending decision on disposal. As materials are removed, hand frisk the uncovered wall with a Beta/Gamma probe to check for elevated radiation readings.

7.4.8 If the decision is made to release materials based on discovery of no activity on the wall, all materials shall be surveyed to ensure that activity shall not be released.

7.4.9 Monitor contamination levels using the Ludlum Model 3 ratemeter and 44-9 probe, or equivalent, to identify beta/gamma emitting activity. If contamination is greater than expected levels and would present a hazard to workers doing the removal, stop the current work evolution and notify the Project Manager or Radiation Protection Supervisor..

7.4.10 After decontamination of the room is completed, package all radioactive materials & equipment used in the decontamination effort. Transport the packaged equipment and materials to the decon trailer to effect cleanup.

7.4.11 Remove, decontaminate, and survey emergency escape hatches from the hot cell roof.

7.4.12 There are two floor drains in the hot cell, one toward the center of the cell and one in the back right hand corner. Using means available, remove concrete from the drain system. The piping system may not be completely filled with concrete and removal may be difficult. If removal of concrete for the drains is possible, use drain brushing as possible to remove contamination from the piping surfaces. If removal of concrete from the drains is not possible, use excavation tools to remove the drains taking care not to spread contamination from the pipes.

7.4.13 The hot cell door sets in a trough immediately outside the cell. This trough has at various times been contaminated and has a drain system which connects to the same drain piping as the hot cell drains. The trough and shield door rails may need decontamination, the drain will need to be removed in the same manner as the hot cell drains.

7.5 Shield Door Decontamination

7.5.1 The undersurfaces of the shield door are not accessible and have been identified as contaminated. Position the door past its open position by disabling the door microswitch and operating the door open switch to place the door in position for lifting.

NOTE: Engineering evaluation is required prior to removal of the roofing structures to prevent possible accidental roof collapse.

7.5.2 Remove roof plates above the door and any structural interference in

the roof. Install lift lugs into the door, lift the door from the facility, cover & secure the bottom of the door with plastic sheet to prevent spreading contamination and set the door on a prepared pad outside the building to facilitate disassembly, decontamination, and survey for release of the door.

7.5.3 Disassemble the door movement mechanisms and remove the wheels to enable transfer of these components to the decon trailer for cleaning and release.

7.5.4 Survey all door surfaces to ensure it is releasable. Position the door as desired by Fort McClellan management.

7.5.5 Return the building to it's original condition by replacement of roof panels and structural supports.

7.6 Ventilation System

7.6.1 Remove all insulation from sections of the ventilation system and perform surveys, conduct decontamination as necessary, and release after final release surveys.

7.6.2 Package all open ends of the ventilation system prior to any attempt at disassembly. When ready to remove a section, consider containment of the component prior to separation. Use a drop cloth under all potential openings, and ensure immediate containment of component internals by placing plastic sheet between the components when space is available.

7.6.3 Surveys of the blower has shown the presence of radioactive materials. Most of the other components of the system have been determined clean. Materials that are found to have identifiable contamination shall be removed, packaged, and transferred to the decon trailer. Survey and decontaminate all components as possible.

7.6.7 All equipment shall be surveyed and released, or if radioactive, decontaminated or shipped for storage or decontamination at another facility. Any ATG equipment items that do not meet the unconditional release criteria shall be packaged for shipment to the ATG facility in Richland, WA.

7.7 Outside Areas

7.7.1 Soil samples have shown the presence of activity associated with hot cell operations. These areas are identified on Figure O-1.

7.7.2 Perform a detailed radiation survey using a Micro-R meter of the excavation area. Make special note of any readings exceeding 5 micro-R/hour, on contact with any surface, above the average background radiation levels.

7.7.3 Stage a B-25 box adjacent to each area. Remove the surface of the ground to a level of 24 inches. Continue to survey at this depth to identify any further contamination. Remove soil as necessary to remediate this area down to a level of 48 inches. Do not exceed this depth without permission of the Project Manager. Additional safety considerations are necessary below this depth.

7.7.4 Samples of removed materials obtained may be analyzed using gamma spectroscopy. Any sample indicating radioactivity levels exceeding those of the average background samples shall be considered contaminated and handled as such. Any contaminated materials shall be placed in a protective container which shall be labeled "Caution Radioactive Materials" to prevent the spread of contamination.

7.7.5 The drain system from the building passes underground from the office corner of the building. This system previously transferred liquids to a processing system in the control pit. The piping may require removal and disposal as radioactive. In order to access this system, review the building plans to identify the approximate location of the system. Take measurements with a micro-R meter to identify the pipe from above the ground surface. From approximately 10 feet away from the structure, begin excavation of the soil in the region of the pipe location. Continue excavation and sloping of the walls of the hole as necessary to allow access to the piping for removal.

7.8 Preparation of the Containers for Shipment.

This phase of the contract activities requires more detailed handling of radioactive material. A Radiation Work Permit (RWP) shall be initiated to provide written instructions to the workers specifying the necessary

radiological controls that may be required to perform the work. The workers shall be briefed on this phase of the work and shall be required to comply with the RWP. The workers briefing shall be documented.

7.8.1 LSA boxes may be used to package any radioactive contaminated wall coverings, and floor materials removed. All proposed packaging qualifies with the "Strong Tight Container" criteria for shipment of LSA materials.

7.8.2 Workers shall use care when moving radioactive materials to minimize the spread of contamination and minimize airborne contamination.

7.8.3 When the containers are full, the plastic inside liner will be gathered and sealed with duct tape allowing enough room to securely fit the lid on. The lid gasket shall be inspected and the lid placed in position to install the barrel ring and barrel bolt. Any excess or loose material around the boxes shall be removed before the box can be moved.

7.8.4 The Radiation Protection Supervisor shall cause to be performed and documented a contamination survey on each box and approve the removal of the box from the packaging area. The full boxes from the packaging area will be placed in the box staging area.

7.8.6 Boxes placed in the staging area shall be prepared for shipping and burial by the Broker and the forklift operator. Each box shall be prepared for shipment and burial by completing all of the information required on the Processing Record, ATG Form 101. Completed boxes shall be segregated from the others in the staging area.

7.9 Shipment of Radioactive Waste

7.9.1 Preparing the shipping manifest records and estimating the activity in each container shall be the responsibility of the Radiological Controls Supervisor and the Broker.

7.9.2 Shipping of all radioactive waste shall be in accordance with References 4.2, 4.3, 4.5, 4.6, and the receiving site license conditions.

7.9.3 Radionuclide content and concentration of the packages shall be established based on gamma spectral data, direct survey data and available

historical data.

7.9.4 The loads will be based on the weights of the completed packages. Approximately 45,000 lbs. of cargo weight will be allowed on each designated shipper's truck, depending on the empty weight of the truck and trailer.

7.9.5 Each load shall be transported in enclosed vans as and "Exclusive Use Vehicle". The hazard class and number is expected to be "Radioactive Material LSA - N.O.S.", UN2912. A shipping waste class, reportable quantity and container type calculation will be performed to assure that the Department of Transportation regulations and burial site license and acceptance requirements are met. The vehicle and trailer shall be placarded and a vehicle radiological survey performed. A copy of the shipping manifest and supporting documentation shall accompany the load to the burial site.

7.9.6 Loading of the vehicle shall be performed by the Broker and the Decontamination Technician with the aid of the forklift. The containers shall be placed on the trailer and a dolly will be used to move the containers into place. The load shall be secured from shifting during transit. The van doors shall be padlocked and a security seal attached. The padlock key shall be sent with the shipping documents. The broker shall ensure notifications for the shipment are made as necessary.

7.10 Final Release Surveys

7.10.1 Do final release surveys as necessary to remove all needs for radiological control and ensure remediation to uncontrolled status.

7.11 Demobilization

7.11.1 All material handling equipment shall be wiped clean. Any temporary fabricated enclosures will be wiped clean, any inside plastic will be carefully removed and surveyed for release.

7.11.2 Postwork radiological surveys shall be performed in a manner that will duplicate the prework radiological surveys. Material samples, area exposure rates, contamination surveys and air samples shall be taken and analyzed in approximately the same location and with the same type of

instruments that the prework surveys were taken. Comparing the prework and postwork survey data will aid in evaluating that no adverse impacts have occurred.

7.11.3 Upon release of the posted work area, remove all materials/supplies and waste material from the work area. Dispose of radiologically clean waste materials as directed by the AMCCOM Project Manager. Verify postwork surveys are satisfactory and remove site postings.

7.11.4 Obtain exit bioassays from all personnel.

7.11.5 Remove the security barrier around the area.

7.11.6 Conduct surveys to ensure free release of the office, port-o-let, etc., dismantle as required and return to vendor.

7.11.7 Site release shall be based on the following:

7.11.7.1 Soil sample results indicate no radioactivity above natural back-ground.

7.11.7.2 Micro-R radiation survey results indicating no radiation levels exceeding those of general area background. In no case shall residual radiation or radioactivity levels exceed those of Regulatory Guide 1.86, or 10 CFR 20 limits for exposure to the general public.

7.11.8 Depart site.

7.12 Final Reports

7.12.1 Prepare final Radiological and Health & Safety Report.

7.12.2 Prepare final Shipment and Inventory Schedules.

7.12.3 Prepare and submit Final Project Report.

8.0 STAFFING

The project personnel will consist of a Corporate office component and an on-site component. The Corporate component will consist of the Director, of Remediation Services, the Corporate Health Physicist and support personnel. The on-site component will consist of the AMCCOM Project Manager, ATG Project

Manager or designee, ATG Radiological Controls Supervisor and operations personnel. Project management personnel directly responsible for the project and their general duties are listed below:

8.1 AMCCOM Project Manager

The AMCCOM Project Manager will have overall authority and responsibility for the project. All correspondence and communication with regulatory agencies will be performed by the AMCCOM Project Manager. He will direct the contractor's operations and be liaison between contractor and Army personnel. He will keep the base personnel abreast of project progress. Also, he will notify the appropriate authorities of any unusual situations or problems with the project.

8.2 ATG Director or Remediation

The Director is responsible for the overall project. He is to assure that the project meets the objectives and contracted commitments. He has the direct management responsibility and authority for cost, schedule, quality and technical performances of all activities in support of the project. He is ultimately responsible for the implementation of all quality related activities.

8.3 ATG Project Manager

The ATG Project Manager will have overall responsibility for ATG's on-site conduct of the project and will report to the Director, Decontamination and Decommissioning, for oversight and management control. He will provide technical direction for the professional and timely completion of contracted tasks. He will be the primary point of contact with the AMCCOM Project Manager. He is responsible for implementing and monitoring compliance with the operations plan and implementing corrective actions. Other responsibilities include; selecting project staff and assigning duties, reporting to the Project Director project budgets and schedules, identifying and resolving project specific problems. Additionally, he will prepare the following documents:

8.3.1 Report weekly, in writing, the current project status, to the Director of Remediation.

8.3.2 Requisition the procurement of materials and services necessary for project completion.

8.3.3 Manage all on-site personnel, operations, supplies and materials.

8.3.4 Maintain the Daily Operations Log of all project activities.

8.4 ATG Radiological Controls Supervisor (RCS)

The ATG RCS will report directly to the Corporate Health Physicist (CHP) for Health and Safety standards application and for assistance in regulatory compliance and indirectly to the Project Manager or designee. He will supervise all radiological aspects of operations to ensure complete regulatory compliance and providing on-site guidance to the decontamination technicians performing their duties. He is also responsible for movement and loading of the completed containers. Additionally, he will prepare the following documents:

8.4.1 The weekly safety and regulatory compliance report to the CHP for review. He shall also communicate, as required, with the CHP for technical and regulatory guidance.

8.4.2 Specify radiological and industrial safety requirements for all activities conducted on-site.

8.4.3 Monitor radiological controls practices and overall performance of on-site personnel and take corrective action as required.

8.4.4 Review and maintain radiological controls records including bioassay results.

8.4.5 Maintain copies of reference documents, licenses, procedures, training and qualification records, and any related project records.

8.4.6 Maintain the radiological control log and record all pertinent information in this log on an on-going basis.

8.4.7 Prevent performance of work by project personnel whenever, in his opinion, such work is inherently unsafe or is being performed in an unsafe manner. He will inform the Project Manager or designee and the CHP of stop-work decisions and shall seek expeditious resolution.

8.4.8 Inspect and assist with the shipment of radioactive materials including the shipment of any samples shipped for analysis.

8.4.9 Conduct or direct the performance of radiological and Health & Safety surveys necessary to the safe completion of project activities.

8.4.10 Train and advise site personnel as required on techniques necessary to minimize personnel exposure and the potential spread of radioactive contamination.

8.4.11 Maintain site safety and radiological controls equipment free of defects to facilitate immediate access and use.

8.5 Equipment Operator/Decontamination Technician

The Decontamination Technicians will be contractors to ATG or ATG employees from other facilities. The Equipment Operator/Decontamination Technician is a radiation worker trained and will be familiar with handling and packaging radioactive material. Worker responsibilities will include: barrel handling, fabrication and assembly duties, packaging soil and forklift operations and/or other heavy equipment.

8.6 Contract Equipment Operators

Local heavy equipment operators may be utilized for this work. They shall meet the requirements for Health and Safety as specified for all other project personnel.

9.0 RECORDS

At project completion, the ATG Project Manager or designee is responsible for the development and submittal of the Final Report. The Final Report shall be reviewed and approved by the Director, Decontamination and Decommissioning prior to submittal to the Government. The Final Report shall include all Radiological and Health & Safety survey documentation and Shipping and Inventory Schedule documentation. The Final Report shall be submitted to HQ, AMCCOM. AMCCOM may distribute copies as required by Government protocol.

Contractor project records shall be maintained in accordance with references 4.5, 4.6, 4.7 and 4.8.

Equipment and service needs

Frontloader and backhoe with operator- 7 days
30 Ton Crane with operator to remove door - 1 day
Boring tools and taps to cut and tap penetrations in door for eye hooks
Sponge-jet sponge blaster unit for decon of hot cell
30 gallon drum and tygon hose for draining shield window
Decon trailer with HEPA ventilation
Crew trailer with heat and electricity
Office area, work room, and counting area
4 large tables and 12 chairs in crew work area.
Copy machine
Computer and printer
Fax machine and phone line
Grass mowed
Time sheets and company forms
10 B-25 boxes for disposal of materials
Work procedures and safety procedures
Equipment and supplies for survey operations
TLD Dosimetry for crew
Protective clothing (Tyveks) - 40 pair
Gloves - 100 pair
Booties - 50 pair
Radiation detection instruments
 2 Model 3 - Alpha detectors
 12 Model 3 - Beta/gamma detectors
 2 Model 19 gamma detectors
 2 Model 2929 counters with 500 planchettes
Soil sampling tools
Decontamination equipment - masslin, sandpaper, grinders, cutters.
High and low volume air samplers
Air sample filters
Calibration and check sources
Electrical service checkout
Emergency equipment/ safety equipment
Potable water
Stepoff-pads, safety placards, radiation signs, barrier tape
NRC form 3
Emergency alarm system