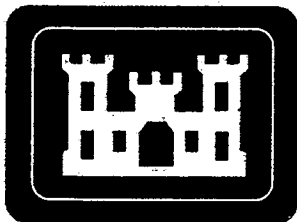

REVISION 0

RADIOLOGICAL SUPPORT WORK PLAN GIFREHC BUILDING ROOF REMOVAL ST. LOUIS, MISSOURI

OCTOBER 2001



**U.S. Army Corps of Engineers
St. Louis District Office
Formerly Utilized Sites Remedial Action Program**



Science Applications International Corporation
An Employee-Owned Company

October 12, 2001

1526 20011012.001

Mr. James A. Mills, P.E.
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Contracting Officer's Representative
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St. Louis, MO 63103

**SUBJECT: Contract DACW43-00-D-0515, Task Order 0001
Transmittal of the Revision 0 "RADIOLOGICAL SUPPORT WORK PLAN
GIFREHC BUILDING ROOF REMOVAL"**

Dear Mr. Mills:

Please find enclosed the Revision 0 of the *Radiological Support Work Plan GIFREHC Building Roof Removal*. Additional copies of this document are being distributed to the individuals identified below.

If you have any questions or need additional information, please call Sherry Gibson at (314) 581-7767 or me at (314) 770-3000.

Sincerely,

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

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OCTOBER 2001

prepared by

U.S. Army Corps of Engineers, St. Louis District Office, Formerly Utilized Sites Remedial Action Program

with assistance from

Science Applications International Corporation
under Contract No. DACW43-00-D-0515, Task Order 0001

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ACROYNMS AND ABBREVIATIONS

$\mu\text{Ci/mL}$	microcurie per milliliter
ACM	asbestos containing material
A_{eff}	air effluent discharge limit
AHA	Activity Hazard Analysis
ALARA	as low as reasonably achievable
BZ	Breathing Zone
cm^2	square centimeters
DAC	derived air concentration
DCGL	derived concentration guideline level
DOT	Department of Transportation
dpm	disintegrations per minute
EC&HS	Environmental Compliance and Health and Safety
FSSP	Final Status Survey Plan
ft^2	square foot
FUSRAP	Formerly Utilized Sites Remedial Action Program
GA	General Area
GIFREHC	General Investment Funds Real Estate Holding Company
HP	health physics
HPT	health physics technician
HSWP	Health and Safety Work Permit
m^2	square meter
MDC	minimum detectable concentration
mrem/yr	millirem per year
pCi/g	picocuries per gram
PPE	personal protective equipment
PVC	polyvinyl chloride
QA	quality assurance
RME	Radiation Monitoring Equipment
ROE	Right of Entry Agreement
RPM	Radiation Protection Manager
RWT	Radiation Worker Training
SAIC	Science Applications International Corporation
SLAPS	St. Louis Airport Site
SSHO	Site Safety and Health Officer
SSHP	Site Safety and Health Plan
TEDE	total effective dose equivalent
Th	thorium
TODE	total organ dose equivalent
USACE	U.S. Army Corps of Engineers

1.0 SCOPE

The GIFREHC building roof removal project will involve several parties each having different responsibilities. The responsibilities for each party are clarified in the "Agreement Regarding Implementation of the October 6, 1998 Right of Entry Agreement" (ROE) between the U.S. Army Corps of Engineers (USACE) and the General Investment Funds Real Estate Holding Company (GIFREHC) dated August 20, 2001.

GIFREHC, the owner of the building, has contracted a roofing contractor that will be responsible for removal and replacement of the existing roof assembly. The roofing contractor has subcontracted an asbestos contractor that will be responsible for removal of non-friable asbestos containing material (ACM).

USACE has contracted Science Applications International Corporation (SAIC) to provide health physics (HP) coverage and final status survey verification for the roof removal project. Stone and Webster has been contracted to collect, transport, and dispose of radiologically contaminated roofing debris.

The scope of this work plan is specifically applicable to providing HP support for the protection of the workers, and the general public during the GIFREHC building roof removal project for the following activities:

- removal of the existing radiologically contaminated roof assembly;
- decontamination of roof areas;
- final status survey of roof areas;
- radiological surveys of non-friable ACM; and
- collection of project waste in government provided containers.

Procedures for loading, unloading, transporting, interim storage, and disposal of radiologically contaminated waste will be performed by Stone and Webster in accordance with their existing waste management procedures and the Department of Transportation (DOT) requirements.

This work plan specifies the appropriate HP requirements to implement and maintain the radiological support necessary to satisfy regulatory requirements during the GIFREHC building roof removal. The scope of this plan is limited to radiological safety and does not include industrial safety or asbestos removal. Waste disposal and transportation are addressed separately by Stone and Webster in their existing waste management procedures. Requirements for final status survey of the roof surfaces are being addressed under a Final Status Survey Plan (FSSP). The requirements in this plan are derived from the existing SAIC HP procedures and the *SAIC Site Safety and Health Plan (SSHP) for St. Louis – FUSRAP Activities* (USACE, 2000) which comply with USACE EM 385-1-80 and 10 CFR 20 requirements and are here incorporated by reference. All personnel and activities covered by this work plan will follow the SAIC HP procedures and the SSHP for radiological support issues not specifically listed in this plan.

2.0 INTRODUCTION

The contractor performing this work will remove and replace approximately 2,200 square feet (ft²) of roofing each day. The roofing material consists of five layers. From top to bottom they are; gravel, a top layer of tar, a layer of fiberglass-like insulation, a bottom layer of tar, and a layer of cardboard-like insulation. The roofing material, including tar and insulation, of the GIFREHC building was sampled by SAIC on October 25, 2000. The summary of data collected by SAIC is listed in Table 2-1. Based on the results of those samples, material removed during the roof removal will be treated as radiological waste.

Of the Formerly Utilized Sites Remedial Action Program (FUSRAP) contaminants of concern, only thorium-230 (Th-230) was identified above background. The highest concentration of Th-230 is 477 picocuries per gram (pCi/g) in the bottom layer of tar. Since much of the contamination is fixed in the tar, the potential for airborne exposure is low. The bottom layer of insulation has a high potential to break apart and crumble during cutting operations. However, it is expected that it contains a sufficient amount of moisture to minimize airborne disbursement.

Some of the roofing material (e.g., flashing) contains non-friable ACM. The asbestos contractor will remove and segregate ACM. SAIC will survey the ACM for surficial contamination.

Table 2-1. GIFREHC Building Roof Sample Radioactive Isotope Concentrations

Sample Type	Th-230 (pCi/g) (including background)		
	Min	Max	Mean
Top Tar	0.26	3.18	1.97
Top Insulation	0.35	19.4	7.08
Bottom Tar	4.11	477	129
Bottom Insulation	1.81	21.0	10.4

2.1 ROOF REMOVAL WORK DESCRIPTION

The estimated work schedule for roof removal each workday will be in accordance with the mutually agreed upon roof removal plan as specified in the ROE. The roof removal plan will describe the sequencing of removal activities including:

- All personnel attending a morning safety briefing;
- Roofing contractor removal start time and removal rate;
- SAIC verification survey start time and survey rate;
- Roofing contractor conditions for turnover to SAIC for verification survey;
- Roofing contractor conditions for roof replacement;
- Roofing contractor removal completion time;
- SAIC verification survey completion time.

The roof removal will be completed in several steps:

- The gravel will be removed first, exposing the top layer of tar.
- The remaining layers will then be removed using a special rotating saw to cut the material into manageable pieces. These pieces will be controlled and taken to a waste collection and transport vehicle located on the ground level at the east side of the building. Any remaining residual material will be removed using a shovel or other suitable means, controlled, and taken to the waste collection and transport vehicle leaving the exposed metal roofing.
- Some sections of roof may contain ACM. The asbestos contractor will remove and segregate all ACM. The ACM will be made available for SAIC to survey. SAIC will not handle any ACM.
- Structurally unsound roof decking will be removed and will not be surveyed. Any roof decking removed will be contained and taken to the waste collection and transport vehicle. (NOTE: It is the responsibility of the roofing contractor to ensure that all radiologically contaminated waste is placed safely into the waste collection and transport vehicle without spreading contamination outside the "Restricted Areas".)
- Once the exposed, structurally sound roof decking is dry and free of debris, the roofing contractor will turn the area over to the SAIC and a survey will be performed to verify that the roof decking is not radiologically contaminated above the levels specified in the GIFREHC Roof Removal Final Status Survey Plan.
- Although it is not expected that any roof decking will fail the verification survey, if any area fails, a single attempt to decontaminate the area using chemicals and abrasives will be conducted. If the area still fails, the roof decking will be removed and taken to the waste collection and transport vehicle by the roofing contractor.
- After the section of roof has been verified to be below the levels specified in the GIFREHC Roof Removal Final Status Survey Plan, the contractor will replace the section with new roofing material.
- Stone and Webster will manage the waste collection and transport vehicle. The waste will be collected and transported by Stone and Webster to St. Louis Airport Site (SLAPS) and dispositioned at that location. Radiological support for the collection, transportation, and disposition of waste and the radiological area around the waste collection vehicle will be provided by Stone and Webster.

3.0 RADIOLOGICAL SUPPORT IMPLEMENTATION

3.1 TRAINING

3.1.1 Radiation Worker (Radworker)

A radiation worker is an individual that by virtue of his/her job assignment may receive a total effective dose equivalent (TEDE) in excess of 100 millirem per year (mrem/yr). Although no individual is expected to receive a dose greater than 100 mrem/yr on this project, all personnel involved with the roof removal will be required to successfully complete Radiation Worker Training (RWT). Radworkers are qualified to work with radioactive materials under the direction of health physics technician (HPT) or health physicist. RWT will be given by qualified SAIC personnel and will normally last 2 to 4 hours. Other RWT programs may be accepted in place of SAIC RWT if certification of successful completion of the training is provided, and the training is determined to be equivalent by SAIC.

3.1.2 Health Physics Technician (HPT)

HPTs are personnel who will provide radiological support. HPT responsibilities are outlined in the SSHP. HPTs involved with the roof removal will be trained in accordance with SAIC HP procedures to perform assigned activities.

3.1.3 Daily Radiological Safety Briefings

Daily radiological safety briefings will be performed at the beginning of the workday by the SAIC Site Safety and Health Officer (SSHO) or lead HPT and shall address applicable issues specific to the day's activities. The daily briefing will be incorporated into the roofing contractor's morning "Toolbox" meeting and should generally take from five (5) to fifteen (15) minutes. Daily briefings refresh workers on radiological topics and allow opportunities for worker questions/issues to be addressed and answered. Documentation of the topics covered and a list of all personnel attending the briefing will be recorded.

3.2 DESIGNATION OF RADIOLOGICAL AREAS

3.2.1 Radiological Support Boundaries

Radiological Areas will be posted and controlled for all roof removal activities, including the waste chute, up to the waste collection and transport vehicle. SAIC will be responsible for surveying the waste chute after the job is complete and posting and controlling access to the chute from the roof. However, Stone and Webster will post and control access to area on the ground level that is under their control. SAIC HPTs shall monitor the ground area below the adjacent section of roof when there is a potential for material to fall over the edge. To control the spread of unacceptable levels of contamination, those affected ground areas shall be cleared

visually of roof material and areas not subject to soil contamination will be radiologically assessed to ensure that potential hazards are adequately controlled.

3.2.2 Radiological Area Setup and Posting

During active roof removal, (usually 0700 to 1200), the entire roof area will be posted as a "Controlled Area". Personnel accessing this area shall review the daily safety briefing, notify the lead HPT, and sign the control log. The area surrounding the section of roof being removed will be posted as a "Restricted Area". The lead HPT will barricade that area using rope or equivalent to alert personnel of the radiological boundary. A path from the active removal area to the waste disposal chute will be established, posted as a "Restricted Area", and barricaded as well. These areas will be deposted upon a successful radiological survey as described in Section 3.5.3 of this work plan. All efforts should be made to avoid creating a waste disposal path on a new section of roof.

The lead HPT will also establish an "Access Control Area" on the roof adjacent to the Restricted Area. This area will be used for all access to and from the Restricted Area; to doff personal protective equipment (PPE); and to survey equipment and personnel out of the Restricted Areas.

3.2.3 Access Control Into Radiological Areas

The lead HPT will be responsible for access control into radiological areas. Personnel accessing the roof area during active roof removal shall review the daily safety briefing, notify the lead HPT, and sign the control log. Personnel accessing Restricted Areas shall have successfully completed RWT, wear the appropriate PPE in accordance with the Health and Safety Work Permit (HSWP) for the activity they will be performing, have reviewed and understood the appropriate HSWP, signed the "Restricted Area" control log, and be aware of other activities in the area where they will be performing work.

Personnel not involved with the roof removal project (i.e., maintenance personnel, safety personnel, etc.) that require roof access shall notify the lead HPT, sign the control log, and be aware of posted areas. These individuals shall not be allowed into Restricted Areas except in emergency situations. During active roof removal and survey, all personnel not involved with the roof removal project shall make every effort to access their required area of the roof without crossing a Restricted Area boundary. These controls will not apply once the Restricted Areas have been deposted (usually after 1200 and during off hours).

3.2.4 Drink Station For Personnel In Restricted Areas

A drink station may be setup in the uncontaminated access control area. This will reduce the amount of PPE used and the amount of time taken to doff PPE and survey out of the Restricted Area. The lead HPT shall survey the drink station daily after use to verify that there is no spread of contamination onto the drink station.

Personnel that use this drink station must remove their gloves; have the HPT perform a hand and face survey; and wash their hands and face prior to getting a drink. All materials for the drink station (e.g., table, cooler, ice, liquid, disposable cups, etc.) will be setup and provided by the roofing contractor. Items from the Restricted Area shall not be placed on the drink station table or materials. A drink station use procedure will be posted.

3.3 PERSONAL PROTECTIVE EQUIPMENT (PPE)

PPE for site tasks covered by this work plan are based on potential site-specific radiological hazards as listed in the Activity Hazard Analysis (AHA) found in Appendix A. Due to other hazards that may be present (e.g., physical, chemical, etc.) a combination of protective equipment will be selected so that adequate protection is provided for all hazards. Specific equipment is listed on the attached task specific HSWP (Appendix B).

SAIC's PPE program is controlled by Environmental Compliance and Health and Safety (EC&HS) Procedures 13, "Personal Protective Equipment" and 20, "Hazardous Waste Operations", and 29 CFR 1910, Subpart I, Personal Protective Equipment. The level of protection and types of materials selected for a particular task are based on the following:

- potential for exposure because of work being done;
- activity duration;
- route of exposure;
- concentration of radiological contaminants in the medium of concern.

The potential for exposure is low due to the nature of the radiological contamination. Potential routes of exposure are inhalation, ingestion, absorption, and contact with an open wound. However, inhalation is the most likely route for exposure and poses the highest potential hazard. The following precautions will minimize the potential for exposure:

- Personnel with unbandaged open wounds will not be allowed in the Restricted Area. Personnel with bandaged wounds may be allowed access as determined by the lead HPT.
- Personnel shall avoid hand to mouth contact while in the Restricted Area. No eating or smoking in the Restricted Areas.
- Drinking only allowed in Restricted Areas at formally established drink stations using appropriate procedures.
- Dust shall be kept to a minimum and breathing zone (BZ) air samplers will be worn in accordance with Section 3.4.2.2 of this work plan.
- If personnel in the Restricted Area notice damaged PPE, they shall leave the area, be surveyed by an HPT and don new PPE, as directed by the HPT.
- PPE required on the HSWP may be upgraded or downgraded by the SAIC Radiation Protection Manager (RPM) based on the site conditions and monitoring results.

3.3.1 Task-Specific PPE

This section lists the types of protective clothing that will initially be used for the project. Requirements for task-specific levels of protective clothing are listed in the task specific HSWP. Levels of protection expected to be necessary to protect against radiological hazards at this project site include Modified Level D Protective Equipment:

- Tyvek® or equivalent coveralls;
- nitrile or polyvinyl chloride (PVC) inner gloves;
- heavy cotton or leather outer gloves;
- 16 inch rubber boots or rubber overboots.

3.3.2 Respiratory Protection

It is not expected that respiratory protection will be necessary during roof removal. However, airborne radioactive contamination may be produced as a result of disturbance of the roofing material that has fixed contamination. Areas with airborne radioactive contamination in excess of 6E-12 microcurie per milliliter ($\mu\text{Ci/mL}$) [Th-230 derived air concentration (DAC)] are defined as Airborne Radioactivity Areas. If airborne contamination levels at or above this level are detected, work will be stopped and SAIC will consult with USACE, GIFREHC, and the roofing contractor to evaluate the best course of action for continued work.

3.4 EXPOSURE MONITORING PROGRAM

3.4.1 Exposure Limits

Occupational exposure and exposure to members of the public to ionizing radiation shall be maintained in compliance with the Federal dose limits set forth in 10 CFR 20.1201 and 20.1301, respectively. SAIC's philosophy for work involving ionizing radiation shall be to keep exposures to workers, the public, and the environment as low as reasonably achievable (ALARA). The following Table 3-1 presents exposure limits as they apply to this project.

3.4.2 Personnel Monitoring

10 CFR 20.1502 requires internal and/or external monitoring of individuals likely to exceed in one year 10% of the Federal limits. Based on past monitoring of individuals performing similar work with equivalent or greater concentrations of similar radionuclides no individual involved with the roof removal is expected to exceed 10% of the limits. It is not anticipated that monitoring for internal or external radiation exposure is required for this project. However, as indicated in Section 3.4.2.2, workers will, at least initially, be monitored for internal exposure to confirm this conclusion.

Table 3-1. Radiation Exposure Limits

Affected Individual	Period	Affected Organ / Dose Equivalent Type	SAIC ALARA Goals ^d (rem)	USACE ALARA Limit ^c (rem)	NRC Limits (rem)
Adult Radiation Worker	Annual	TEDE	0.1	0.5	5.0
Adult Radiation Worker	Annual	TODE	0.5	5.0	50
Adult Radiation Worker	Annual	Lens of the Eye	0.15	1.5	15
Adult Radiation Worker	Annual	SDE	0.5	5.0	50
Declared Pregnant Radiation Worker	Gestation Period	Fetus	0.1	0.5	0.5
SAIC Employee ^a /Public	Annual	TEDE	0.05	0.1	0.1
Member of the Public	Hour	TEDE	0.001	0.002	0.002
Th-230 Derived Air Concentration (DAC) (10 CFR 20 Table 1 Column 3)					6E-12 μ Ci/mL
Th-230 Air effluent concentration (A_{eff}) (10 CFR 20 Table 2 Column 1)					3E-14 μ Ci/mL

^a Applies to all employees not qualified as radiation workers.

^b The abbreviations are summarized below:

TEDE = Total effective dose equivalent.

TODE = Total organ dose equivalent (TODE) is defined as the sum of the deep-dose equivalent and the committed dose equivalent to any individual organ or tissue other than the lens of the eye.

SDE = Shallow-Dose Equivalent to the skin or any extremity.

^c From EM 385-1-80. Requires RSO permission to exceed.

^d SAIC St. Louis FUSRAP ALARA Goals. Requires RPM permission to exceed.

3.4.2.1 External Monitoring

The average radiation levels on the roof are approximately 0.01 mrem/hr including background. This level is comparable to other background radiation levels in the vicinity (e.g., USACE trailer complex on remediated Supervalu property). An individual working a full year in that area would receive an external dose comparable to background and well below 10% of the Federal limits, and below all limits listed in Table 3-1. Therefore, external monitoring is not required and will not be performed.

3.4.2.2 Internal Monitoring

It is not expected that any individual will receive an internal exposure in excess of 10 % of the Federal Limit. However, for confirmatory monitoring purposes, BZ air-samplers will be worn by 25% of the workers in Restricted Areas. The results of this monitoring generally assumed to be representative of employees' worst case exposure in the Restricted Area. The lead HPT will collect and screen the samples daily to estimate air particulate concentrations in the BZ of workers and determine if stop work actions are necessary. The stop work action level for consideration of respiratory protection is 6E-12 μ Ci/mL gross alpha based on the Th-230 Class Y DAC. If the BZ screening result is initially at or above the stop work action level, the sample will be held until the next day and screened again. This will allow time for radon progeny to decay. The sample will then be sent to the lab for analysis of gross alpha radiation in accordance with FUSRAP Air Sample Handling and Analysis Procedure. Second screening and/or lab results above the stop work action level will cause an immediate stop work order and SAIC will

consult with USACE, GIFREHC, and the roofing contractor to evaluate the best course of action for future work.

If it is determined that the average air particulate concentration in the BZ of the workers over the first 10 working days is less than or equal to $6\text{E-}13$ $\mu\text{Ci/mL}$ gross alpha (10 % of the Th-230 DAC); the requirement to perform confirmatory internal monitoring may be reduced to a single BZ worn one day per week by the individual most likely to work in the highest airborne radioactivity concentration. As USACE monitors personnel likely to exceed 100 mrem/yr, this action is based on personnel not exceeding 100 mrem for the project if they worked 4 hours per day for 100 days (400 hours). Personnel working without respiratory protection for 400 hours in 10 % of the DAC would receive 100 mrem. If the average air particulate concentration in the BZ of the workers over the first 10 working days is greater than $6\text{E-}13$ $\mu\text{Ci/mL}$ gross alpha, then BZ samplers will continue to be used as described above and the screening and/or lab data will be used for DAC-hr tracking.

BZ pumps are required to operate at approximately 2 liters per minute for at least 212 minutes and collect a minimum volume of 424 liters in order for lab and field equipment to detect a minimum detectable concentration (MDC) equivalent to 10 % of the DAC.

BZ analytical data from the lab will be provided as available at the end of the project in accordance with the ROE to USACE for transmittal to GIFREHC.

3.4.3 Members of the Public/Environmental Monitoring

During active roof removal, three General Area (GA) air-sampling pumps will be operated to determine the potential exposure to members of the public. One pump will be placed inside the building to determine potential exposure to building occupants and will run continuously. The location for this pump will be mutually agreed upon by GIFREHC and USACE and will be indicative of occupant exposure. Two pumps will be located on top of the roof in areas indicative of exposure to the public and will run only during active roof removal. There will be no visible emissions outside the Restricted Areas. Following the first week, the lead HPT will collect and screen all GA samples on the first working day of the week to determine if other controls are necessary. The action level for notifying USACE is the Th-230 Class Y air effluent discharge limit (A_{eff}) $3\text{E-}14$ $\mu\text{Ci/mL}$ and is based upon a member to the public receiving 50 mrem/yr with continuous occupancy.

GA pumps are required to operate at approximately 40 liters per minute for at least 212 minutes (3.5 hours) and collect a minimum volume of 8,484 liters in order for lab and field equipment to detect a MDC equivalent to the A_{eff} .

GA analytical data from the lab will be provided as available at the end of the project in accordance with the ROE to USACE for transmittal to GIFREHC.

3.5 RADIOACTIVE MATERIAL SURVEYS

3.5.1 Material and Equipment

Equipment taken into the Restricted Areas will generally be retained and not made available for an unrestricted release survey unit until the end of the project or project phase. All material and equipment taken into Restricted Areas shall be surveyed by an HPT prior to removal. The equipment contamination levels shall be at or below the limits of Table 3-2 prior to unrestricted release. Items that do not meet these limits shall be controlled as radioactive material. At the end of the project, items controlled as radioactive material will be decontaminated per Section 3.6 to meet the limits of Table 3-2 or disposed as radiological waste, as applicable. Items with inaccessible areas or potential volumetric contamination will be held for disposal. All items to be dispositioned as radiological waste will be inventoried and described, including an approximate value, for submission to USACE as a record of disposal.

Table 3-2. Acceptable Unrestricted Release Levels for Material and Equipment*

Nuclide ^a	Average ^{b,c}	Maximum ^{b,d}	Removable ^{b,e}
Transuranics, Ra-226, Ra-228, Th-230, Th-228, Pa-231, Ac-227, I-125, I-129	100 dpm/100cm ²	300 dpm/100 cm ²	20 dpm/100 cm ²

* Information from NRC Regulatory Guide 1.86.

^a Where surface contamination by both alpha- and beta-gamma-emitting nuclides exists, the limits established for alpha- and beta-gamma-emitting nuclides should apply independently.

^b As used in this table, dpm means the rate of emission by radioactive material as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

^c Measurements of average contaminant should not be averaged over more than 1 square meter (m²). For objects of less surface area, the average should be derived for each such object.

^d The maximum contamination level applies to an area of not more than 100 cm².

^e The amount of removable radioactive material per 100 cm² of surface area should be determined by wiping that area with dry filter or soft absorbent paper, applying moderate pressure, and assessing the amount of radioactive material on the wipe with an appropriate instrument of known efficiency. When removable contamination on objects of less surface area is determined, the pertinent levels should be reduced proportionally and the entire surface should be wiped.

In order to minimize time-consuming decontamination efforts, equipment that will be repeatedly used in a Restricted Area may be wrapped in plastic without a survey and controlled in a secure location outside the Restricted Area but within the controlled area of the site. Transfer of these items from the Restricted Area to the secured storage area must be performed by a qualified Radworker and the items must remain in the Radworker's possession 100% of the time during transport. The outside of the plastic must meet the limits of Table 3-2. This equipment may only be used in Restricted Areas until an unrestricted release survey is successfully performed. Personnel shall make every attempt to minimize the amount of material brought into the Restricted Areas.

3.5.2 Personnel

A successful radiological survey as specified on the HSWP shall be performed on all personnel prior to exiting a Restricted Area. This survey shall be performed by the HPT in the

access control area after doffing all PPE. Decontamination of personnel shall be performed in accordance with Section 3.6.2 of this work plan. Personnel shall wash their hands and face prior to eating, smoking, or drinking.

3.5.3 Deposting Radioactive Material Areas

After all the roofing material has been removed from a section of roof, that section will be surveyed and deposted in accordance with the GIFREHC Building Roof FSSP. The Restricted Area pathway and access control area will be surveyed and must meet the derived concentration guideline level (DCGL) prior to deposting. Special attention shall be given to areas where there is a high potential for contamination (e.g., doffing area, entrance to active roof removal area, etc.)

3.5.4 Routine Periodic Radiological Surveys

Since all Restricted Areas will be released daily, the need for periodic monitoring is reduced. Monthly and at the completion of the project, roof access areas (roof-level and ground level) will be surveyed to check for spread of loose surface contamination. These surveys will be performed and documented in accordance with HP-405, "Radiological Surveys" and will be reviewed by the SAIC RPM for trends or unacceptable conditions.

3.6 DECONTAMINATION

The potential for tool, equipment, or personnel contamination during the roof removal activity is very limited due to the concentrations and characteristics of the radiological contamination and the use of PPE. If items or personnel become contaminated, the contamination will generally be easy to remove. Tools and equipment that are not easily decontaminated to levels at or below Table 3-2 will be disposed as project waste.

3.6.1 Equipment

All equipment decontamination must be performed in a Restricted Area. Materials used for decontamination must be disposed as radiological waste. Equipment may be scrubbed/wiped with wet wipes or scouring pads or comparable methods. Equipment requiring maintenance or repair will be decontaminated prior to servicing. Following decontamination, all equipment shall be surveyed by an HPT if it is intended to be released for unrestricted use. If fixed or loose contamination is found above the limits in Table 3-2, of the equipment will be decontaminated per Section 3.6 or disposed as project waste. Equipment leaving the site for unrestricted use must be at or below the limits of Table 3-2.

3.6.2 Personnel

Detectable contamination above background on personnel shall be removed only by a qualified HPT in accordance with SAIC procedure HP-403, "Personnel Decontamination". If the contamination is on personal clothing, the use of tape applied to the affected area will generally

remove the contamination. Articles of clothing that cannot be decontaminated to meet the limits of Table 3-2 shall be disposed as radiological waste.

Contamination found on skin or other body parts shall be removed by rinsing with soap and water or other appropriate method in accordance with SAIC procedure HP-403, "Personnel Decontamination". All personnel contamination incidents shall be reported immediately to the SAIC RPM and USACE.

4.0 INSTRUMENTATION PROGRAM

Calibration, maintenance, and use of Radiation Monitoring Equipment (RME) shall be performed by qualified individuals in accordance with SAIC HPs procedures.

4.1 INSTRUMENT SELECTION

Survey instruments used for radiological measurements will be:

- selected based on the survey instrument detection capability for each known radionuclide or mixture of radionuclides;
- capable of measuring the quantity of radionuclides on building surfaces, equipment, tools, and personnel;
- calibrated [National Institute of Standards and Technology (NIST) traceable sources] for the known radionuclide spectrum and distribution;
- operated and maintained by qualified personnel, in accordance with SAIC's quality assurance (QA) program (e.g., response/operational checks, etc.).

Based on the objectives listed above, the following equipment, instrumentation, and sources have been selected for personnel and equipment surveys during the roof removal project.

Ludlum 43-89 scintillation detector coupled with a Model 2360 meter, or equivalent (Scan surveys and Fixed Point surveys for total contamination):

Building surfaces, equipment, tools, and personnel will be surveyed for total α contamination to determine the location and extent of Th-230 contamination.

Ludlum 43-10 scintillation detector coupled with a 2929 bench scaler, or equivalent (Smear, BZ, and GA screens):

Building surfaces, equipment, and tools will be surveyed for removable alpha (α) contamination. The bench scaler will be used to screen smear, BZ, and GA samples for α emitting contaminants. (Note: BZ and GA samples will be further analyzed in the USACE Radioanalytical Laboratory using a low background proportional flow counter.)

Check Sources:

An NIST traceable Th-230 source will be used to ensure adequate detection capabilities by instrumentation used for roof removal surveys.

Air Monitoring Pumps:

GA pumps capable of collecting at least 40 liters per minute using a calibrated rotometer will be used to collect air samples as stated in Section 3.4.3.

BZ pumps capable of collecting at least 2 liters per minute using a calibrated rotometer will be used to collect air samples as stated in Section 3.4.2.

4.2 CALIBRATION

All rotometers and radiation and contamination equipment used to implement this work plan will have been calibrated with an NIST traceable standard within the past year. Calibration paperwork is maintained in the SAIC field office.

4.3 DAILY CHECK-IN

All radiation monitoring equipment must be satisfactorily checked-in daily prior to use. The daily check-in shall consist of an operational check (sound, battery, integrity); a source check (using NIST traceable sources); and a background check, as applicable. If the instrument fails to meet any of the checks listed above, the instrument shall be taken out of service and tagged as defective.

BZ pumps will be flow tested with a calibrated rotometer daily (pre and post sample flow). The GA pumps will be flow tested with a calibrated rotometer weekly during sample collection (pre and post sample flow).

5.0 RECORDKEEPING AND REPORTING

All records created by this work plan shall be maintained in accordance with the applicable SAIC HPs procedure requiring the record. All radiological incidents and deficiencies as defined in SAIC HPs procedure HP-112, "Radiological Incident and Deficiency Reporting" shall be documented and reported to the SAIC RPM. The lead HPT shall maintain and submit to the SAIC RPM all appropriate records created by this work plan. Copies of records will be provided to USACE upon conclusion of the FUSRAP project.

6.0 WASTE DISPOSITION

All radiological waste created by this work plan shall be disposed in the waste collection and transport vehicle. The waste disposal contractor, Stone and Webster, shall manage and dispose all radiological waste generated by the roof removal in accordance with their existing waste management procedures and the DOT requirements.

7.0 INDUSTRIAL SAFETY

Industrial safety oversight (e.g., fall protection, hearing conservation, asbestos, etc.) for contractor personnel falls outside the scope of this work plan. SAIC will provide industrial safety oversight for SAIC and SAIC subcontractor personnel only. Industrial safety for other contractors is the responsibility of those contractors. When contradictions occur between SAIC and other contractor's SSHPs, SAIC will comply with the requirements that are more restrictive.

7.1 FALL PROTECTION

SAIC personnel will be covered under the roof removal contractor's fall protection program. It is anticipated that this plan will involve putting a cable along the edges of the building to serve as their fall protection. When sections of roof decking are removed exposing a fall hazard, a suitable means of fall protection will be provided by the contractor prior to SAIC personnel accessing the area. As a rule, when no fall protection is present, SAIC personnel will stay a minimum of 6 ft away from the fall hazard.

7.2 ASBESTOS

The asbestos contractor will supply its own PPE. The asbestos contractor will remove and segregate all ACM. SAIC will not handle any ACM. SAIC will perform a radiological survey for surficial contamination on the ACM. Survey results will be documented and reported to USACE. USACE will confirm the presence or absence of radiological contamination and authorize disposal of the waste by USACE if appropriate.

8.0 REFERENCES

- 10 CFR 20.1201. 1995. U.S. Nuclear Regulatory Commission. "Dose Limits for Individual Members of the Public-Subpart C-Occupational Dose Limits: Occupational Dose Limits for Adults."
 - 10 CFR 20.1301. 1995. U.S. Nuclear Regulatory Commission. "Dose Limits for Individual Members of the Public-Subpart D-Occupational Dose Limits: Dose Limits for Individual Members of the Public."
 - 10 CFR 20.1502. 1991. U.S. Nuclear Regulatory Commission. "Dose Limits for Individual Members of the Public-Subpart F-Surveys and Monitoring: Conditions Requiring Individual Monitoring of external and internal Occupational Dose."
 - 29 CFR 1910. 1991. U.S. Nuclear Regulatory Commission. "Occupational Safety and Health Standards-Subpart I-Personal Protective Equipment."
- Nuclear Regulatory Commission (NRC), 1974. *Termination of Operating Licenses for Nuclear Reactors*. Regulatory Guide 1.86, NRC, Washington, D.C., June.
- USACE, 2000. *SAIC Site Safety and Health Plan (SSHP) for St. Louis – FUSRAP Activities, St. Louis, Missouri*. January.

Activity Hazard Analysis:

Activity: GIFREHC Building Roof Removal Project

Analyzed By: Randy Hansen

Reviewed By: Rodney Alderson

Principle Steps	Potential Safety/Health Hazards	Recommended Controls
GIFREHC Building Roof Removal Project	Slips, trips, and falls	Keep work areas clear and maintain proper housekeeping - mark, barricade, or eliminate trip/fall hazards. Personnel shall not jump from elevated surfaces. Unloaded equipment and materials shall be stored appropriately.
		SAIC personnel will use fall protection at working heights > 6 ft. The roof removal contractor will provide fall protection. If fall protection is not provided, SAIC personnel shall remain at least 6 ft away from edges requiring fall protection when working on roof areas.
	Radiological contamination	Personnel shall wear PPE as required by the SSHP and outlined in the HSWP.
		BZs shall be worn by 25% of personnel working in Restricted Areas for confirmatory monitoring as stated on the HSWP unless otherwise dictated by the Radiological Support Work Plan.
GIFREHC Building Roof Removal Project		All employees and equipment shall be monitored for contamination prior to exit from radiological areas. The extent of personnel surveys (whole body, hand & foot,

		etc.) shall be performed as listed on the HSWP. Minimize contact with radiological materials, survey and wash hands & face prior to taking anything by mouth (eating, drinking, smoking, chewing, etc.) No eating, smoking, chewing, etc. permitted in any radiological area. Drinking in radiological areas only permitted at approved drink stations. Follow posted procedure.
Equipment To Be Used	Inspection Requirements	Training Requirements
Support vehicles Heavy duty extension cord and GFCI Hand Tools and Carts Roof Cutter		Site Orientation Radiological Worker (if work is in radiological area)

Reviewed by (USACE): _____

Date: _____

Activity Hazard Analysis:

Activity: Radiological support and Final Status Survey GIFREHC Building Roof Removal Project

Analyzed By: Randy Hansen

Reviewed By: Rodney Alderson

Principle Steps	Potential Safety/Health Hazards	Recommended Controls
Travel to/at project site	Operation of motor vehicles and trucks	All site personnel operating motor vehicles shall comply with all federal, state, and local traffic regulations. Personnel shall only use vehicles that are in good condition and are safe to operate. Personnel shall routinely inspect vehicles and document as outlined in the SSHP. All personnel will drive defensively, wear seatbelts while vehicles are in motion, and comply with site speed limits. Backing of vehicles shall be avoided when possible. Extra care shall be taken to back vehicles when unavoidable.
Unloading Equipment	Heavy lifting, strains, sprains.	No individual employee is permitted to lift any object that weighs over 50 lbs. Proper lifting techniques shall be used. Multiple employees or the use of mechanical lifting devices are required for lifting objects over the 50 lb. limit.
Radiological support and Final Status Survey	Use of mechanical equipment	Only qualified personnel shall be permitted to

GIFREHC Building Roof Removal Project

Slips, trips, and falls

operate equipment. SAIC personnel will not be operating any mechanical equipment. However, other project contractors and building personnel will be operating mechanical equipment including forklifts. Personnel shall not position themselves between equipment and stationary objects and shall only approach the equipment after the bucket/fork/load (if applicable) is on the ground and after receiving a signal from the operator. Personnel shall maintain eye contact with the operator when approaching equipment. Personnel shall never stand under suspended loads

Keep work areas clear and maintain proper housekeeping - mark, barricade, or eliminate trip/fall hazards. Personnel shall not jump from elevated surfaces. Unloaded equipment and materials shall be stored appropriately.

SAIC personnel will use fall protection at working heights > 6 ft. The roof removal contractor will provide fall protection. If fall protection is not provided, SAIC personnel shall remain at least 6 ft away from edges requiring fall protection when working on roof areas.

Ladders shall be inspected before each use, be in good condition, and only be used as intended by their design. Ladders shall be erected on level surfaces and tied off while

Radiological support and Final Status Survey

GIFREEC Building Roof Removal Project	Radiological/chemical contamination	Personnel shall wear Modified Level D (D+) PPE as required by the SSHP and outlined in the HSWP. Medical clearance in accordance with 29 CFR 1910.120. TLDs will not be required for personnel working in radiological areas or determined by the RPM and SAIC Procedure HP-502. All employees and equipment shall be monitored for contamination prior to exit from radiological areas. The extent of personnel surveys (whole body, hand & foot, etc.) shall be performed as listed on the HSWP. Minimize contact with radiological materials, survey and wash hands & face prior to taking anything by mouth (eating, drinking, smoking, chewing, etc.) No eating, smoking, chewing, etc. permitted in any radiological area. Drinking in radiological areas only permitted at approved drink stations. Follow posted procedure.
Radiological support and Final Status Survey	Chemical hazards	Monitoring for chemicals is not anticipated to be necessary but shall be performed, if applicable.

GIFREHC Building Roof Removal Project

Illumination

Radiological support and Final Status Survey

Copies of MSDSs for all hazardous chemicals on site will be maintained in the work area. MSDSs will be available to all employees for review.

PPE requirements for work with or around hazardous chemicals (i.e., sample preservation or in the laboratory) shall be commensurate with hazards, chemical use and MSDS recommendations.

No eating, drinking, smoking, chewing, etc. permitted in any chemical use area.

Emergency eye wash (ANSI Z 358.1) will be available in the vicinity of chemical use area.

Medical clearance in accordance with 29 CFR 1910.120.

Prevent contact with chemical, wash hands & face prior to taking anything by mouth (eating, drinking, smoking, chewing, etc.)

Site fieldwork will be conducted during daylight hours (no earlier than 15 minutes after sunrise and no later than 15 minutes before sunset) and natural illumination will be used.

Work conducted in buildings will be illuminated to meet the minimums stated in

GIFREHC Building Roof Removal Project	Cold Stress Biological hazards (bees, wasps)	29 <i>CFR</i> 1910.120. General controls consist of adequate clothing, staying dry, use of the buddy system, and taking scheduled and unscheduled breaks in temperature controlled areas, as necessary. Move individuals who become wet to a sheltered, warm area. Tape interfaces of clothing, use insect repellent. Be aware of suspect areas (e.g., inside roof vents, etc.) Personnel should inform supervisors of allergies to biological hazards.
Equipment To Be Used	Inspection Requirements	Training Requirements
Support vehicles Heavy duty extension cord and GFCI Sampling instruments Monitoring instruments	Inspect hand tools and extension cords each day of use. Inspect monitoring instruments for calibration each day of use.	Site Orientation Radiological Worker (if work is in radiological area) 40 Hr HAZWOPER & current refresher

Reviewed by (USACE): _____

Date: _____

HEALTH AND SAFETY WORK PERMIT

HSWP No: S-01-017.0 (Rev.) _____ Routine X Special Page 1 of 2

Requester: James Moos Date Issued: 9-17-01 Expiration Date: End of job

Job Description: GIFREHC building roof removal: Hands-on work of potentially contaminated material in Restricted Areas.

H/S COVERAGE	DRESS REQUIREMENTS		DOSIMETRY REQUIREMENTS
☒ Continuous ☐ Intermittent ☐ Buddy System ☐ Confined Space Entry Permit. ☒ Notify H/S upon entry to area. ☒ HSWP Entry / Exit Log Required ☒ Personnel/Equipment survey prior to exit from Restricted Areas	☐ Canvas Coverall ☐ Paper Coveralls ☐ Skull Cap ☐ Cloth Gloves ☐ Rubber Gloves ☐ Plastic Booties ☐ Plastic Coveralls ☒ Tyvek Coveralls ☒ Outer gloves (cloth or leather)	☒ Rubber Shoe covers ☐ Canvas Hood ☐ No personal outer-clothing. ☐ Tape gloves/ booties to p.c.'s ☐ Lab Coat ☒ Surgeon's gloves	☐ 200 mR Dosimeter ☐ Whole Body TLD ☐ Ring TLD ☐ 500 mR Dosimeter ☐ Multi-Badging RESPIRATORY PROTECTION ☐ Full-Face Respirator ☐ Air Line Respirator ☐ SCBA ☒ Other <u>BZ 1 in 4 workers unless</u>
SAFETY EQUIPMENT not required by work plan			
☐ Safety Glasses ☐ Rubber Gloves ☐ Half-Mask Resp ☐ Welding Shield w/ _____ number lens ☐ Steel-toed Shoes ☐ Face-Shield ☐ Hard Hat ☐ Hearing Protection ☐ Goggles ☐ Full-face Resp. ☐ Leather Apparel ☐ Rubber Apron			
ADDITIONAL REQUIREMENTS (ALARA considerations, Pen and Ink changes, housekeeping, safety, job specific): <u>X Notify HPT to use drink station</u> <u>X See AHA for additional HPT Safety Controls</u> <u>X Entry & Exit Restricted Area through Access Control Area only.</u> <u>* Potentially contaminated roofing debris must be contained during transport to waste disposal units in order to minimize the potential for spread of loose contamination.</u> <u>* Roof removal work practices shall include: maintaining loose debris within Restricted Areas, No visible emissions outside Restricted Areas.</u>			
A PRE-JOB BRIEFING IS REQUIRED PRIOR TO ENTRY ON THE HSWP			
Reviewed By: <u>[Signature]</u>		Date: <u>9-17-01</u>	
Approved By: <u>[Signature]</u> Radiation Protection Manager/designee		Date: <u>9-18-01</u>	
Collective dose goal: _____		Approved by: _____ Date: _____	
Terminated by: _____		Date: _____	
Revision termination _____ HSWP termination: _____ (check one)			
Reason for termination: _____			

PRE-JOB BRIEFING

HSWP No. S-01-017.0
(Rev.)

Date: 9-17-01

Job Description: GIFREHC Building Roof Removal: Hands-on work of potentially contaminated material in Restricted Areas. (Roof material removal, transport to waste disposal area, etc.)

PRE-JOB BRIEFING CHECKLIST

INITIALS

- Discuss Pre-job ALARA review, if applicable
- Review requirements of HSWP
- Review the step-by-step aspects of the job, ensuring all personnel are aware of their required actions

PERSONNEL ATTENDING PRE-JOB BRIEFING

<u>Printed Name</u>	<u>Signature*</u>	<u>HP ID No.</u>

* By signature, personnel certify they have read, understand, and will comply with the requirements of the HSWP.

Signature _____
RPM or designee Date _____

HSWP REQUEST

Requester: James Moos Request date: 9-3-01 Dept.: _____
 Location: VP-2L GIFREHC
 Job Description: GIFREHC building roof removal including: hands-on work of potentially contaminated material in Restricted Areas. (Roof material removal, transport to waste disposal area, etc.)
 Job start date (est.): _____ Job end date (est.): _____ Shift(s): 1
 Total personnel required for job: _____ Total hours in work area: 400 Total person-hours: _____

HSWP ASSESSMENT

- Radiological Data** HSWP No. S-01-017
 Dose Rates: N/A @ contact $\leq 10 \mu\text{R/hr}$ @ 1 Foot N/A @ 3 Feet
 Contamination: < 20 dpm/100 cm² (average) N/A dpm/100 cm² (maximum)
 Airborne Radioactivity: > .25 DAC Yes ☒ No ☒ If Yes, enter actual levels. _____ DAC
 Person-Rem Estimate: _____ man-rem Pre-Job ALARA Review Required Yes ☐ No ☒
- Chemical Data** (list probable chemicals and average concentrations). Not applicable to this HSWP
- Industrial Safety** (Document potential hazards or additional electrical, biological, physical, and ergonomic factors affecting the operations to be performed).
Not applicable to this HSWP

Completed by: Randy Ch... Date: 9-17-01
 Viewed by: [Signature] Date: 9-18-01
 RPM or designee

HEALTH AND SAFETY WORK PERMIT

HSWP No: S-01-018.0
(Rev.)

____ Routine X Special Page 1 of 2

Requester: James Moos Date Issued: 9-17-01 Expiration Date: End of job

Job Description: GIFREHC building roof removal support: Radiological support, verification surveys, roof decon, etc.

H/S COVERAGE	DRESS REQUIREMENTS		DOSIMETRY REQUIREMENTS
☒ Continuous ☐ Intermittent ☐ Buddy System ☐ Confined Space ☐ Entry Permit ☒ Notify H/S upon entry to area ☒ HSWP Entry / Exit Log Required ☒ Personnel/Equipment survey prior to exit from Restricted Areas	☐ Canvas Coverall ☐ Paper Coveralls ☐ Skull Cap ☒ Cloth Gloves <u>02</u> ☐ Rubber Gloves ☐ Plastic Booties ☐ Plastic Coveralls ☒ Tyvek Coveralls <u>02</u>	☒ Rubber Shoe covers <u>02</u> ☐ Canvas Hood ☐ No personal outer-clothing ☐ Tape gloves/ booties to p.c.'s ☐ Lab Coat ☒ Surgeon's gloves <u>01</u>	☐ 200 mR Dosimeter ☐ Whole Body TLD ☐ Ring TLD ☐ 500 mR Dosimeter ☐ Multi-Badging RESPIRATORY PROTECTION ☐ Full-Face Respirator ☐ Air Line Respirator ☐ SCBA ☒ Other <u>BZ 1 in 4 workers unless</u>
SAFETY EQUIPMENT ☒ Safety Glasses ☒ Steel-toed Shoes ☐ Goggles ☐ Rubber Apron ☒ Fall Protection <u>4 in 6 ft of edges 6 ft high or greater.</u> ☐ Rubber Gloves ☐ Face-Shield ☐ Full-face Resp. ☐ Half-Mask Resp ☒ Hard Hat ☐ Leather Apparel ☐ Welding Shield w/ _____ number lens ☒ Hearing Protection <u>if noise levels > 85 dBA TWA</u> ☒ Safety vest around moving equipment			
ADDITIONAL REQUIREMENTS (ALARA considerations, Pen and Ink changes, housekeeping, safety, job specific): <u>- Notify HPT to use drink station</u> <u>① Required for decon</u> <u>Enter & Exit Restricted Area through Access Control Area only</u> <u>② Required PPE during oversight and verification surveys</u> <u>See AHA for additional HP and industrial safety control measures</u>			
A PRE-JOB BRIEFING IS REQUIRED PRIOR TO ENTRY ON THE HSWP			
Reviewed By: <u>[Signature]</u>		Date: <u>9-17-01</u>	
Approved By: <u>[Signature]</u> Radiation Protection Manager/designee		Date: <u>9-18-01</u>	
Collective dose goal: _____		Approved by: _____ Date: _____	
Terminated by: _____		Date: _____	
Revision termination _____ HSWP termination: _____ (check one)			
Reason for termination: _____			

HSWP CONTINUATION SHEET

Page 2 of 2

MONTHLY ASSESSMENT VERIFICATION			
HSWP Number <u>S-01-018.0</u>			
Date (month/day/year)	Signature of HP/ST	Revision Required	
		Yes*	No

*If "Yes", state the reason a revision is required and whether a pen and ink change or complete revision is necessary:

Revision approved: _____
RPM or designee

Date: _____

HSWP REQUEST

Requester: James Moos Request date: 9-3-01 Dept.: _____
 Location: VP-2L GIFREHC
 Job Description: GIFREHC building roof removal support: radiological support, verification surveys, roof decon, etc.
 Job start date (est.): _____ Job end date (est.): _____ Shift(s): _____
 Total personnel required for job: 2 Total hours in work area: 400 Total person-hours: 800

HSWP ASSESSMENT

- Radiological Data** HSWP No. 5-01-018

Dose Rates: N/A @ contact $\leq 10 \mu\text{R/hr}$ @ 1 Foot N/A @ 3 Feet

Contamination: < 20 dpm/100 cm² (average) N/A dpm/100 cm² (maximum)

Airborne Radioactivity: > 25 DAC Yes ☐ No ☒ If Yes, enter actual levels. _____ DAC

Person-Rem Estimate: NA man-rem Pre-Job ALARA Review Required Yes ☐ No ☒
 - Chemical Data** (list probable chemicals and average concentrations). Scrubbing Bubbles (see attached MSDS)
 - Industrial Safety** (Document potential hazards or additional electrical, biological, physical, and ergonomic factors affecting the operations to be performed).

Slips, trips, falls; noise; electrical; heavy equipment; mechanical equipment (other contractors), cold weather, work in elevated areas
- Completed by: Randy Chan Date: 9-17-01
 Reviewed by: [Signature] Date: 9-18-01
 RPM or designee

FUSRAP Document Management System

Year ID

00 2830

Further Info?

☐

Operating Unit

North County

Site

SLAPS VPs

Area

VP 2L

MARKS Number

FN:1110-1-8100g

Primary Document Type

Removal Response

Secondary Document Type

Work Plans & Progress Reports

Subject or Title

SLAPS VPs - Radiological Support Work Plan GIFREHC Building Roof Removal, Revision 0, October 2001

Author/Originator

Company

SAIC

Date

10/1/2001

Recipient (s)

Company (-ies)

CEMVS

Version

Final

Original's Location

Central Files

Document Format

Paper

Confidential File?

☐

Comments

Include in which AR(s)?

- ☐ North County
- ☐ Madison
- ☐ Downtown
- ☐ Iowa

ETL

2.4

SAIC number

Filed in Volume

2

Bechtel ID

