~~Conceptual Defensive Sample~~Sample Technical Directive for a ~~F~~Family of Systems (FoS) Design

INTRODUCTION

The Sample Technical Directive is intended to provide the Source Selection Evaluators with information on the offerors' technical capabilities. This Sample Technical Directive is divided into three major Sections: I) introductory information, including the excerpt from the RFP (Section M), and threat information; II) hypothetical Military Installation Information; and III) the Government's partial solution to meet required Chemical, Biological, Radiological and Nuclear (CBRN) defense capabilities.

Based on the guidance provided in Section I, the offeror shall provide sufficient written details to clearly demonstrate their approach and implementation of a final solution based upon the Government's partial solution provided. The offerors shall include technical methodology and rationale along with their final design solutions. The focus of the threat in this Sample Technical Directive is against specifically identified critical military mission operations and not against the general population. As a result, the objective of the final solution should be focused on maintaining critical military mission operations, protecting mission essential personnel, and quickly restoring essential functions.

Section II describes a hypothetical military installation. This information includes an overview; descriptions of the existing infrastructure, critical mission, facilities, and personnel; physical and environmental information about the site and surrounding area; physical security information; and response information. The offerors will take the information provided in Section II into consideration when preparing their final solution.

Section III offers a partial solution to the chemical, biological, and radiological (CBRN) threats at the hypothetical military installation. Functional CBRN detectors, in use at the Installation, are shown on accompanying diagrams. The offeror will consider all elements of the partial solution in addressing the evaluation factors per Section M of the Request for Proposal. The final solution may modify, add, or delete components from the Government's partial solution (Section III).

Computationally based analysis using geo-physical modeling or simulation tools is not required in the formulation of the design solution. The offeror will develop their solution based on the information provided in this document. It is intended that no additional information will be provided by the Government to complete the design of the hypothetical Installation. In the event that the offeror believes that more information is required than is provided in this document, the offeror's response to this Sample Technical Directive should clearly state the additional information required to complete the final design and indicate the impact this missing information has on their proposed final solution.

I. INTRODUCTORY INFORMATION

A. EVALUATION FACTORS (Excerpted from the RFP, Section M)

The offeror will describe the following Elements:

1. Overall FoS effectiveness - Describe how the overall FoS preserves critical mission under all CBRN attacks and scenarios on military installations. Using the four attack scenarios as representative examples, show how detection, identification, warning, protection, and other response functions are combined to protect personnel, maintain mission-critical capability, and quickly resume mission-critical functions. Discuss alarm assessment, alarm communication and display, decision support, and concepts of operations. Use science-based principles to support the FoS final design. Use performance measures including probability of detection, time for active or passive protection, and response times.
2. Operational Analysis - Discuss the analytical process utilized to determine the FoS design. ~~Demonstrate FoS level of improvement by conducting an Operational Analysis.~~ Compare your final FoS solution with the Sample Technical Directive Partial Solution to demonstrate FoS improvements. In addition, conduct a Sequence and Timing Description (OV-6c) per the latest DoD Architecture Framework ~~2.0, 19 Dec 1997~~.
3. Operation integration of FoS - Demonstrate the operational integration of the proposed FoS architecture with existing installation capabilities.
4. Technical Selection of FoS Components - Specify the rationale for the choice of COTS, GOTS, GFE, hardware, software, other analytical tools, and other response assets. Avoid use of proprietary installed components.
5. FoS System Design - Describe the detailed C4I design in accordance the latest DoD Architecture Framework guidance. Demonstrate FoS C4I architecture integration into the existing installation architecture to support mission continuity.
6. Mission recovery and restoration - Describe recovery operations to maintain mission-critical operations and restore essential installation mission functions.

~~B. The offeror shall provide sufficient written details to clearly demonstrate their approach to understanding the implementation of a complete solution based upon this Technical Directive Partial Solution. The offerors shall present their technical methodology and rationale along with their final design solutions.~~

~~The information provided in the following pages describes a hypothetical military installation and offers a partial design solution to the chemical, biological, and radiological (CBRN) threats at the hypothetical installation. This information includes an overview; descriptions of the existing infrastructure, critical mission, facilities, and personnel; physical and environmental information about the site and surrounding area; physical~~

~~security information; threat scenarios; and response information as well as the partial design solution to the CBRN threats. Functional CBRN detectors in use at the installation are shown on accompanying diagrams. The bidder will consider all elements of the partial design solution presented below in the baseline performance analysis. The optimizedfinal design solution may modify, add, or delete components from the partial design solution.~~

THREAT

Because of the lack of definitive information related to the potential employment of Chemical, Biological, Radiological and Nuclear (CBRN) weapons and materials on a CONUS installation, JPMG has made several assumptions to support the development of the baseline operational scenarios utilized to develop the partial solution. These assumptions include the following:

- Attacks will be covert. Military-type attacks, such as artillery or missiles, against IPP installations or facilities are not expected nor planned.

- Attacks will be focused against critical military operations and facilities. The general population will not be the primary target.

- CBRN weapon systems are difficult to manufacture, weaponize and effectively deliver. Most likely attacks will be relatively small in size with limited contamination/hazard effects.

- The primary goal of an attack on a military base is to cause casualties. It is more likely that a non-persistent chemical agent will be used than a persistent.

- The IPP architecture should not be overly sensitive to variations in agent effects, a single biological agent scenario will provide required information.

- Sites that are located adjacent to hazardous chemical production.

- Already have plans in place to deal with unplanned releases at those sites.

- Radiological devices will most likely use surplus medical or industrial radiological sources, which are widely available, combined with explosives of some kind. Unless thoroughly shielded, these types of devices will have a significant radiological signature that can be detected.

- The JPMG does not view the employment of a nuclear device as a likely IPP threat.

- JPMG assumed an appropriate level of physical security that would prevent entry of quantities that would result in catastrophic events.

Hazard Areas

The attached diagrams show hazard contours for the four-benchmark threat scenarios. These scenarios were developed to support the development of the baseline sample installation

protection plan. They are not intended to be all-inclusive, but do represent a reasonable and acceptable start point.

The biological, chemical weapon, and industrial chemical results were generated by the VLSTRACK model using default parameters in the VLSTRACK database. The radiological hazard was generated with the HPAC model using default parameters in its database. Numerous modeling assumptions were made regarding terrain type, wind speeds, atmospheric stability and other factors that, if varied, could result in significantly different outcomes. However, these depictions are useful for comparing the magnitudes of these threats. Note that, except for the biological benchmark, the hazard areas are relatively small. The contours show infectious dosages (for biological) and lethal dosages (for chemical weapon agents and industrial chemical) at 1%, 20%, 50%, and 95%. For the radiological benchmark, we show integrated exterior dose in cGy for values between 0.1 and 75. For reference, the Institute of Medicine's operational exposure guidance lists 0.1 cGy as "normal risk" and 75 cGy as slightly above "significant risk."

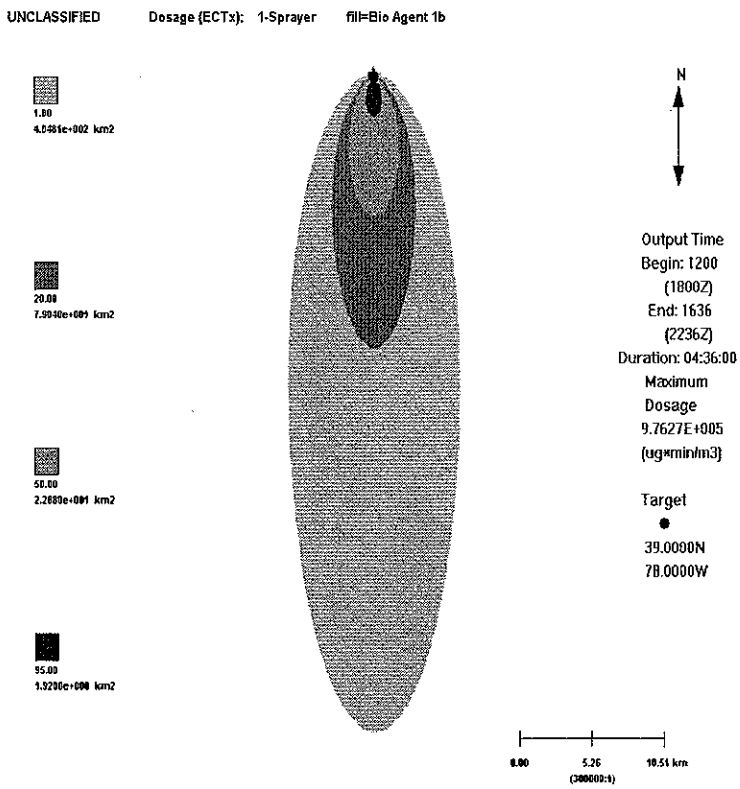
Biological Agent Scenarios

The key question regarding IPP biological detection relates to system density and placement. The Scenario is based on the use of a single 14-liter stationary sprayer attack using anthrax. A 14-liter commercial sprayer evaluated within the US program was found to be an effective method of dissemination. This type of system has been used in all previous biological detection analysis. The technology is easily transportable, mobile and commercially available

This scenario provides an acceptable basis for determining detector density and placement. A line release will cover such a broad area that the attack is generally indifferent to numbers of sensors (line sprayers challenge detector sensitivity, rather than detector spacing).

Feasibility: Costs to produce 14 liters (~2.1 kg) dry anthrax estimated to be $250,000 (*Minimum Resource for Biological Weapons Capability* (U), Enviro Control, Inc, 1976. SECRET. Updated to 2003 dollars)

Representative BWA Contours (note scale)



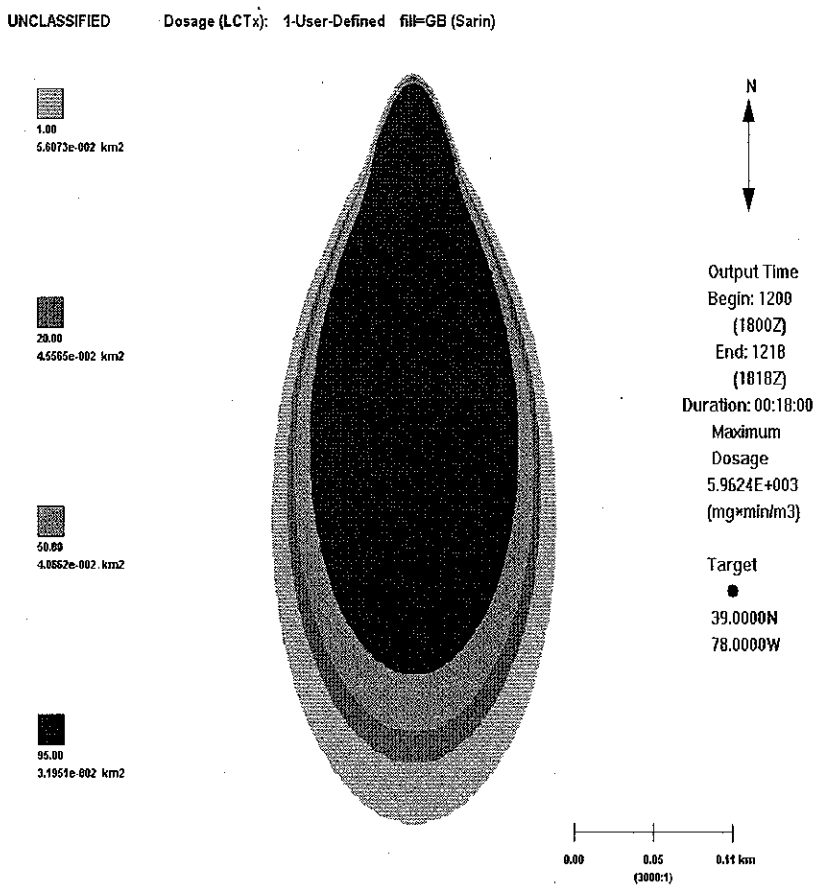
Chemical Weapon Agent Scenarios

Although chemical weapons agents are very hazardous, substantially more chemical agents are required than biological agents to produce an equivalent number of casualties. Chemical weapons can be more difficult to manufacture, weaponize and effectively release than biological agent. They have a more limited downwind distance and smaller hazard area. They must be more accurately placed than biological aerosols to achieve a significant effect at the intended target. This makes the use of large quantities required to support a long line source release unlikely. For this scenario IDA has estimated that no more than 100 liters of a chemical agent can be carried by a single passenger vehicle or van.

Non-persistent chemical agents are more likely to be employed than persistent agents. Non-persistent agents are designed to result in immediate casualties of the target population. Persistent agents are more difficult to manufacture, weaponize and release than non-persistent agents. Persistent agents are primarily terrain denial weapons and are less likely to kill personnel. Sarin (GB) is a non-persistent chemical agent and has been selected as the scenario benchmark. Sarin has been produced by at least one terrorist group and is among the best documented chemical agents outside of military circles. Several open source articles indicate several well-financed terrorist groups can produce Sarin.

Feasibility: Several authors have attempted to cost the production of Sarin. Although all agree that appropriate training is needed, the cost of materials is not an obstacle. A *Scientific American* article (11/5/01) estimates the cost of materials for 280 grams is $130.20, which scales to about $50,000 for 100 liters. Another report, downloaded from the Canadian Security Intelligence Center website (www.csis-scrs.gc.ca/eng/miscdocs/cbter_e.html) cites a 1986 estimate of $200,000 for 1000 kg of Sarin. Scaling down to 100 liters and up to 2003 dollars produces an estimate in the range of $34,000.

Representative CWA Contours (note scale)

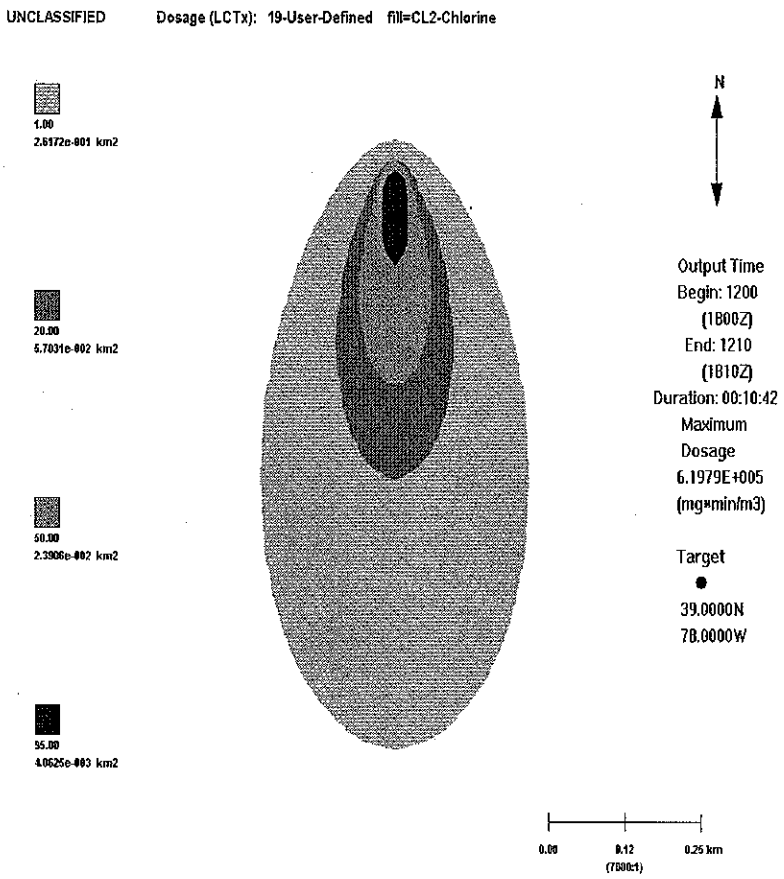


Toxic Industrial Chemical Scenario

There are over 2000 toxic industrial chemicals manufactured and transported around the country. Many of these materials pass through or near DoD installations daily. The JPMG has determined that a 5000 gal tanker truck is the most likely transportation method to transit in or near a military installation and represents the most likely threat. A single TIC was also identified to support analysis efforts. It was determined that Chlorine provided a suitable representative threat to a military installation. This agent threat is realistic, viable and adequate to determine our initial baseline capability. Because the possibilities for toxic chemical release are so broad, both in terms of identity of chemical and amount released, the program will have to conduct additional analysis at each installation to better determine the actual threat.

Feasibility: Unknown, but tankers appear to be widely available or chlorine trucks could be hijacked.

Representative Chlorine Contours (note scale)

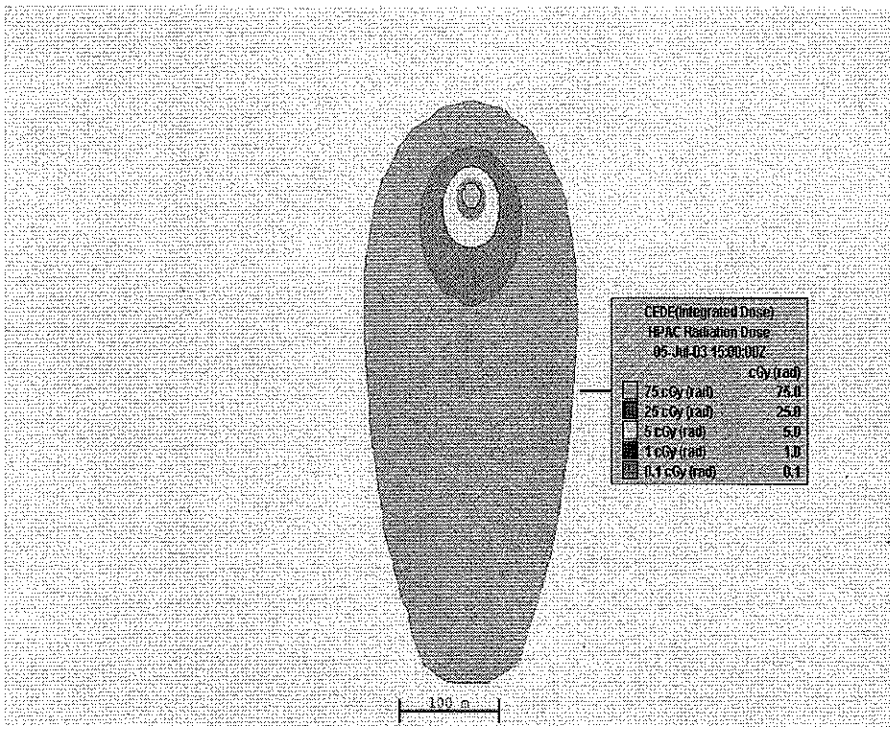


Radiological Materials

There are a variety of gamma emitting radioactive isotopes used for medical and industrial purposes. One of the longest-lived of such isotopes, and therefore perhaps more likely to be available on secondary or black markets is cesium-137. According to the EPA web site, it is used to sterilize food products, in industrial measurement devices, and for medical diagnosis and treatment. It is possible for terrorists to acquire this material from multiple sources. As little as 100 grams of this material (5000 Ci) would be required to construct an effective Radiological Dissemination Device (RDD). This type of device would be easily hidden and transported. This amount of radioactive material, along with a few sticks dynamite or equivalent amount of explosive, would fit into a typical drywall compound bucket.

Feasibility: Although the material is licensed, there is a gray market in used devices, especially in foreign countries. The NRC cites an incident in 1987 where a device was abandoned in a former Brazilian clinic, found by salvagers who dismantled it with resulting widespread contamination.

Representative Radiological Contours (note scale)



II. MILITARY INSTALLATION INFORMATIONDESCRIPTION

II.

A. OVERVIEW

A. Overview:

The following description is intended to represent the results of a limited site survey. This information was utilized to develop the partial solution detailed in Section III. This information will serve as the basis of the development of the detailed installation protection plan.
The Metro Military InstallationRoksides MilitaryAir Force BaseInstallation is located in near a medium-sized city in the southwest United States. It serves as headquarters for the 32nd an Air Bomber Wing (B-52, KC135) and its associated support squadrons, 104th the Air ForceSupport Wing. The baseinstallation covers 5,000 acres. A regional map of the Installation is shown in Figure 1. An overview of the Installation is shown in Figure 2. The Roksides Air ForceMilitary BaseInstallation Metro Military Installation includes runways, hangarsan emergency operations center, a maintenance area, a fire station, security headquarters, a hospital, and a secure area where the Installation's intelligence hHeadquarters (HQ) element command and control (C2) element is situated. Figure 3 is a more detailed view of the areas ofn this e baseInstallation that are of pertinent to this Sample Technical Directivemost interest for the exercise. gathering occurs. The installation is bounded to the west by the Apple Mountains and on the east by the A site plan of the Metro Military Installation is shown in Figure 3 (unless specifically noted, drawings are not to scale).

The 32nd Bomber installationWing provides flexible and responsive combat capability, autonomously or in concert with other forces. The goal of the C2 element is to monitor communications and provide rapid response capability in case of national emergencies. Each of these areas has a security force associated with it. The installation element operates on ais open continuous basis (24 hours / 7 days per week) and is protected by security forces, with physical protection in certain critical areas. located in a secure area.

The information provided in the following pages describes a partial solution to the CBRN threat at a hypothetical facility. The facility information includes a description of the critical mission, facilities and personnel, threat scenarios, physical and operational details about the site and surrounding area, and response information. Functional CBRN detectors in use are shown on accompanying diagrams. The bidder will consider all elements of the partial solution in the baseline performance analysis. The Optimized Solution may modify, add, or delete components from the partial solution.

B. EXISTING INFRASTRUCTUREExisting infrastructure

The following list provides information about the existing ~~installation~~Installation infrastructure that ~~bidders might~~offerors might consider when evaluating the partial design solution and developing ~~an optimized~~final design solution.

1. There is a mix of VHF and UHF radios on the ~~Installation~~Installation.~~ The mix of radios can be modified but the security forces use older VHF radios. The Firefighters have UHF radios.~~ There is a mixture of digital and analog communications devices.
2. The telephone system is old and does not provide ISDN capability to all ~~base~~Installation facilities.
3. Cell phone coverage is ~~good~~adequate at the Southwest corner of the ~~base~~Installation but falls off rapidly ~~as you get away from the Leadville cell towers~~towards the northeast corner of the Installation.
4. All Command and Control and ~~Major~~Critical Mission Facilities have access to the hard-wired NIPRNET. ~~and a~~Administrative computer systems are being upgraded with the Service's integrated network within the next year.~~:~~
5. There is an old Intercom in the secure area complex.
6. There is an ~~Base Installation Command Post~~Emergency Operation Center (EOC), which is only manned during duty hours. ~~fully manned during duty hours and has a duty officer on duty at night.~~ The security watch commander is on duty 24/7, in building R-1.

~~All sensordetector data is terminated locally at the alarm monitoring station of the secure area.~~

7. There is no central Anti-terrorism~~T~~/Force protection~~P~~ (AT/FP) command and control system.
8. Security force officers currently have 2 way radio communications, but there is no existing mass warning or alert capability inside buildings. There is no existing mass warning or alert capability for the ~~installation~~Installation beyond phone and LAN connections to the office spaces inside most occupied buildings.
9. The SK-6 building HVAC system includes two air-handling units (AHU), which are roof mounted. Each has a capacity of 10,000 CFM. The SK-3 HVAC system includes one AHU with a capacity of 2,000 CFM, which is roof mounted. Both systems include ducted supplies with a common return plenum located above a false ceiling throughout the 1 story structure. The HVAC systems typically operate at 80% recirculation, but the fresh air fraction can vary between 10% and 30%.~~-~~ SK-6 building leak tests have shown that the structure is positively pressurized under all operating conditions provided that each AHU operates at 90% of capacity or greater. The SK-3 building is not positively pressurized.

C. CRITICAL MISSION

~~Below is a partial solution for CB protection (Add a paragraph stating such).~~
~~The information provided in the following pages describes a partial solution to the CBRN threat at a hypothetical facility. The facility information includes a description of the critical mission, facilities and personnel, threat scenarios, physical and operational details about the site and~~

surrounding area, and response information. CB sensors in use are shown on accompanying diagrams.

Critical Mission: Although a number of important activities take place at Metro Installation, there are two critical missions of the facility. One is support of a joint intelligence center (see Figure 2). A building located within the secure area houses offices and computer workstations, and critical equipment to support satellite and land line secure communications. Work at the facility takes place during normal operational hours (8 AM to 5 PM) five days a week, but occasionally work takes place in off hours. The layout of the secure area and a floorplan of the building are shown in Figure X.The C2HQ C2 element of theis 32nd Bomber WingInstallation is responsible for coordinating with the Joint Chiefs of Staff to ensure readiness and emergency response to any national crisis. The 32nd-C2 element is responsible for coordinating assets from a number of CONUS based Air ForceMilitary installationInstallations to accomplish their mission. The C2 element is located in the Controlled Room of building SK-6 located inside the Secure Area (see Figure 4). ItThe Controlled Room is 3050 square feetmeters in size (see figure 5). If this element is disabled for more than 12 hours, there will be communication and coordination gaps in our national defense posture. Figures 4-7 show additional details of the security systems around SK-6.

In addition to the interior components of the C2 function, there is a critical exterior antenna array outside requiring 124 personnel in three eight-hour shifts people, located in the maintenance control building, to operate and maintain 24/7. Required maintenance must be accomplished once per shift and takes 60 – 90 minutes to complete. .

The Emergency Operations Center (EOC) is located inside Building SK-36, room B-1. It Room B-1 is 17500 square feetmeters in size (see figure 6). It is responsible for coordinating between First Responders and Emergency Responders both on site and off site. It is also responsible for coordinating with C2 element and InstallationInstallation Command.

PUT OPEN MISSION HERE—what does this mean?

PersonnelD. PERSONNEL:

The other critical mission is to house the Fighting 821st Wing, with 25 F-15 aircraft. 45 pilots, and 200 maintenance crew personnel are assigned to this mission. In addition to flight personnel, the aircraft and maintenance facilities are also critical to mission success.

Mission Critical Personnel: The secure area houses 25 intelligence analysts and technicians, who are all designated as mission critical personnel. These personnel are highly trained and cannot be replaced without disrupting the critical mission of the intelligence center. The fighter mission requires at least 37 of the 45 pilots and 125 crewmembers to remain at fully operational status.The 32nd-C2 element is comprised of 54 intelligence analysts and technicians, operating in three shifts of 18 personnel per shift. Of the 18 personnel per shift, 6 are military. The Antenna Array is staffed by 12 people 24/7Twelve people, 24/7, maintain the Antenna Array:, of whom seven7 are 7 are military. The EOC has 52 military personnel on duty during operational hours. and two during off hours.

~~Twelve personnel are in support of OPEN MISSION~~

~~Personnel will be located in multiple locations.~~

~~Installation~~Installation Personnel: During normal operational hours the entire ~~installation~~Installation population consists of 800 personnel, of whom 200 are military dependents. After hours there are 24 mission critical and 226 off duty military personnel and dependants. ~~After hours, the number of non-essential/military dependent personnel drops to 250, not including the security force. During normal operational hours all intelligence-critical personnel reside inside the secure area.~~ During non-operational hours all non-essential personnel leave the site for homes in the nearby city, with the exception of essential personnel and the security force. The security ~~force~~ office consists of 72 civilian security personnel, operating in three shifts of 24 ~~personsofficers per shift~~. During normal operational hours all intelligence critical personnel reside in the building inside of the secure area. During non-operational hours all non-essential personnel leave the site for homes in the nearby city, with the exception of essential personnel and the security force.

E. INSTALLATION PHYSICAL INFORMATION

This section presents the physical and environmental conditions at the ~~installation~~Installation and the surrounding area.

Topography

The ~~installation~~Installation is located ~~in the southwestern United States~~ on a flat plain. ~~The climate is very similar to San Diego, CA. There are mountains to the west and a river near the eastern boundary.~~

Vegetation

Small shrubs and grass are the only vegetation ~~allowed~~ that~~to~~ ~~grow~~grows near and on the grounds.

Climate/Weather

Table 1 provides climatic and meteorological information for the ~~installation~~Installation and the surrounding area.

Indoor Environmental Conditions

The interior conditions in the buildings at the ~~installation~~Installation are described below.

Temperature: The temperature range inside the buildings in normal conditions ranges between 18 and 24 °C.

Relative Humidity: The relative humidity inside the buildings is 40 to 60 percent.

~~***Interior Lighting:*** Interior lighting in installation buildings is fluorescent.~~

~~***Pressure:*** In the buildings the pressure is constant at 100 kPa when all doors are closed.~~

Table 3-21 Annual Weather Data

Month	Temperature °C							Degree days Base 18.3 °C		Precipitation in centimeters						Relative humidity %			
	Averages			Extremes						Water equivalent			Snow, ice pellets			Hour 05	Hour 11	Hour 17	Hour 23
	Daily maximum	Daily minimum	Monthly	Highest	Date	Lowest	Date	Heating	Cooling	Total	Greatest in 24 hours	Date	Total	Greatest in 24 hours	Date	(Local time)			
JAN	6.2	-5.3	0.5	13	12	-13	30	549	0	2.72	1.80	17-18	6.6	6.1	25	74	54	45	65
FEB	12.9	-2.8	5.1	23	14	-8	4	369	0	1.57	0.76	16-17	15.2	7.6	16	70	47	31	58
MAR	17.9	0.3	9.1	24	8	-6	5	283	0	0.36	0.18	28-29	Trace	Trace	14	59	32	25	48
APR	23.1	4.6	13.8	29	15	-4	13	134	3	0.61	0.28	9-10	1.3	1.3	3	53	25	17	37
MAY	25.8	9.3	17.6	32	6	2	11	56	37	6.30	2.16	20	2.5	2.5	3	62	34	28	48
JUN	31.7	14.2	22.9	39	28	7	9	6	149	2.59	2.06	8	0.0	0.0		54	27	22	41
JUL	35.6	18.3	27.0	41	14	12	2	0	273	2.03	1.52	16-17	0.0	0.0		52	28	22	40
AUG	32.7	17.3	25.1	38	2	13	20	0	212	3.89	1.98	9-10	0.0	0.0		60	35	25	44
SEP	30.7	14.1	22.4	38	5	8	16	13	138	1.02	0.51	14-15	0.0	0.0		56	32	24	44
OCT	25.6	7.1	16.4	33	5	-3	31	82	25	0.69	0.46	21	2.3	2.3	30	50	26	18	37
NOV	12.1	-2.2	5.0	22	4	-9	29	397	0	2.31	1.88	7-8	2.0	2.0	23	69	41	37	56
DEC	11.3	-5.1	3.2	17	3	-9	31	467	0	2.21	1.83	26-27	6.9	6.4	26-27	66	44	40	57
YEAR	22.2	5.8	14.0	41	JUL 14	-13	JAN 30	2356	838	26.29	2.16	MAY 20	36.8	7.6	FEB 16	60	35	28	48

Table 3—21 Annual Weather Data (continued)

Month	Wind				Percent of possible sunshine	Average sky cover, tenths, sunrise to sunset	Number of days									Average station pressure mb
	Resultant		Average speed - km/hr	Fastest observed 1-minute value			Sunrise to sunset			Precipitation .025 cm or more	Snow, ice pellets 2.5 cm or more	Thunderstorms	Heavy fog, visibility 0.4 km or less	Temperature °C			Elev. 1620 meter
	Direction	Speed -km/hr		Speed - km/hr	Direction	Date	Clear	Partly cloudy	Cloudy					Maximum		Minimum	
														32° and above	0° and below	0° and below	-18° and below	
JAN	33	7.2	14.8	68	NW	22	11	6	14	6	1	0	2	0	3	26	0	836.4
FEB	33	5.1	13.7	51	NW	24	9	10	9	5	2	0	2	0	0	24	0	838.1
MAR	30	1.6	16.9	68	E	14	15	5	11	4	0	1	0	0	0	16	0	836.1
APR	27	3.1	17.1	58	N	30	13	9	8	3	0	1	1	0	0	6	0	835.1
MAY	22	2.3	15.8	58	E	23	9	13	9	11	1	5	0	0	0	0	0	836.1
JUN	14	3.7	15.6	61	E	23	17	8	5	6	0	5	0	19	0	0	0	839.8
JUL	09	3.7	14.6	61	E	15	14	11	6	5	0	4	0	27	0	0	0	840.2
AUG	14	5.1	14.0	76	SW	19	18	8	5	5	0	7	0	21	0	0	0	839.8
SEP	12	4.7	13.2	69	E	14	18	6	6	4	0	3	0	15	0	0	0	840.8
OCT	19	0.5	12.7	55	E	9	15	9	7	2	0	1	0	3	0	2	0	838.1
NOV	34	4.5	13.2	58	SW	4	16	9	5	4	0	0	0	0	0	23	0	839.1
DEC	02	3.2	11.4	56	E	26	17	7	7	4	1	0	0	0	0	30	0	841.5
YEAR	01	0.6	14.5	76	SW	AUG 19	172	101	92	59	5	27	5	85	3	127	0	838.4

F.

Demographies: DELETE OR FIX ADD MORE DETAIL WHERE IS HOUSING, WHO IS AT HOSPITAL ETC—not part of problem spaee. During normal operational hours all intelligenee critieal personnel reside in the building inside of the secure area. Pilots on duty gather in a Ready Room in building PR. Maintenance crews are dispersed between hangars and the flight line in 2 shifts per day, Monday through Friday. During non-operational hours all installation non-essential personnel leave the site for homes in the nearby city, with the exception of a essential personnel and the 2425 person Security Force.

Samples from the DFU bio-aerosol collection system will be collected and shipped to a laboratory facility in California every 48 hours. If a sample tests positive for a biological contaminant, appropriate prophylaxis will be initiated for all installation personnel. Non-mission critical personnel will be evacuated from the installation and will not return until wide area decontamination has been achieved (beyond Guardian scope). Mission critical personnel will continue their normal operations. The road leading from the perimeter of the secure area to the shipping/receiving entrance will be decontaminated with DF200 within 8 hours to allow safe entry and exit of mission critical personnel. In addition, surface samples within the building will be collected within 8 hours to establish the degree of contamination that may have occurred within the building due to penetration of the HEPA filtration and foot traffic from building occupants entering from the contaminated environment outside of the building. Contaminated surfaces inside of the building will be cleaned within 24 hours.

PHYSICAL SECURITY INFORMATION

The following describes ~~Installation~~Installation entry and physical security at the secure area.

Security Information for Installation:

There are 3 main entry gates onto the ~~installation~~Installation. Gate 1 is the main gate with two entrance lanesgate,~~ This~~ and is the designated entry point for all commercial vehicles and operates 24/7. It is capable of processing all visitor vehicles from POVs up to and including ~~tractor trailers~~tractor-trailers. Gates 2 and 3 handle authorized ~~base~~Installation personnel only and their personally owned vehicles (POVs). They are open only from 0600 to 2000 hours on weekdays. Gate 1 has a minimum of 2 Security Force personnel at all times. They check authorized vehicles for ~~installation~~Installation sticker and government identification. ~~They also inspect incoming commercial vehicles using a mirror to check the vehicle undercarriage and verify the installation point of contact.~~ Gates 2 and 3 have one security force officer member, who allows entry to authorized personnel. Visitors or those requiring authorization are directed to Gate 1, where there is a visitor control center, to complete required access authorization. Gate 4, located on the north side of the facility, is used only for maintenance activities.

Security Information for ~~Secure Area~~Critical Operations:

During normal operating hours, the secure area has three civilian security officers who are stationed at the front entrance. ~~One officer operates the central alarm system, another is stationed inside the personnel entry portal, and the third officer mans the vehicle entry portal.~~ When the facility is closed, there are two officers on duty ~~(one operating the central alarm system and the other on random patrol.)~~ Anyone entering the ~~installation~~ secure area must pass through the personnel portal. ~~There is a visitor control procedure in place that requires preauthorization of any visitors. Visitors must have TS clearances, be US citizens, and be escorted the entire time they are in the secure facility. Entering site personnel first go to a badge exchange window where they exchange a plastic laminated identity badge for a facility access badge that includes a magnetic stripe and a picture. After the badge exchange, personnel pass through a metal detector and then an explosives detector. The security officer stands by the wall between the two detectors to verify that all persons pass through both detectors. Table 2 describes communication by the security force at SK-6.~~The EOC has three personnel, two ~~civilian~~civilians and one military, during regular duty hours. During off duty hours, there are two personnel, one civilian and one military.

~~The metal detector is always on. The explosives detector is used on a random basis. After passing through the two detectors, people exit through a set of double doors into the protected area of the facility.~~

G.

~~Installation n—Threat Spectrum and Scenarios~~

~~GENERAL THREATASSUMPTIONS.~~

~~This program lacks a System Threat Assessment Report (STAR). The Installation Protection Program (IPP) is primarily focused on CONUS based installations and facilities. This unique focus can not follow DoDs normal STAR production requirements. Defense Intelligence Agency (DIA) which would normally prepare the document is prevented from doing a formal threat assessment, since the threat relates to the continental U.S. (CONUS) and is under the purview of the Department of Justice (DoJ). Requests have been made to the DoJ to prepare a threat document for this program. This annex will be updated upon receipt of the DoJ assessment.~~

~~The IPP threat is complied from multiple sources and agencies (Institute for Defense Analysis (IDA), Massachusetts Institute of Technology (MIT)/Lincoln National Laboratory (LNL) and the Services) to support the initiation of the program. This document and the attached scenarios are intended to provide a reasonable baseline from which to proceed and to measure the IPP capabilities against. Expansion and modification of the scenarios will occur to support the IPP and the optimization of appropriate technologies at each installation.~~

~~Because of the lack of definitive information related to the potential employment of Chemical, Biological, Radiological and Nuclear (CBRN) weapons and materials on a CONUS installation, JPMG has made several assumptions to support the development of the threat assessment and operational scenarios. These included:~~

~~Attacks will be covert. Military-type attacks, such as artillery or missiles, against IPP installations or facilities are not expected nor planned.~~

~~Attacks will be focused against critical military operations and facilities. The general population will not be the primary target.~~

~~CBRN weapon systems are difficult to manufacture, weaponize and effectively deliver. Most likely attacks will be relatively small in size with limited contamination/hazard effects.~~

~~The primary goal of an attack on a military base is to cause casualties. It is more likely that a non-persistent chemical agent will be used than a persistent.~~

~~The IPP architecture should not be overly sensitive to variations in agent effects, a single biological agent scenario will provide required information.~~

~~Sites that are located adjacent to hazardous chemical production already have plans in place to deal with unplanned releases at those sites.~~

Radiological devices will most likely use surplus medical or industrial radiological sources, which are widely available, combined with explosives of some kind. Unless thoroughly shielded, these type of devices will have a significant radiological signature that can be detected.

The JPMG does not view the employment of a nuclear device as a likely IPP threat.

JPMG assumed an appropriate level of physical security that would prevent entry of quantities that would result in catastrophic events.

HAZARD AREAS

The attached briefing slidesdiagrams show hazard contours for the four benchmark threat capabilities. The biological, chemical weapon, and industrial chemical results were generated by the VLSTRACK model, using default parameters in the VLSTRACK database. The radiological hazard was generated using the HPAC model using default parameters in its database. Numerous modeling assumptions were made regarding terrain type, wind speeds, atmospheric stability and other factors that, if varied, could result in significantly different outcomes. However, these depictions are useful for comparing the magnitudes of these threats. Note that, except for the biological benchmark, the hazard areas are relatively small. The contours show infectious dosages (for biological) and lethal dosages (for chemical weapon agents and industrial chemical) at 1%, 20%, 50%, and 95%. For the radiological benchmark, we show integrated exterior dose in cGy for values between 0.1 and 75. For reference, the Institute of Medicine's operational exposure guidance lists 0.1 cGy as "normal risk" and 75 cGy as slightly above "significant risk."

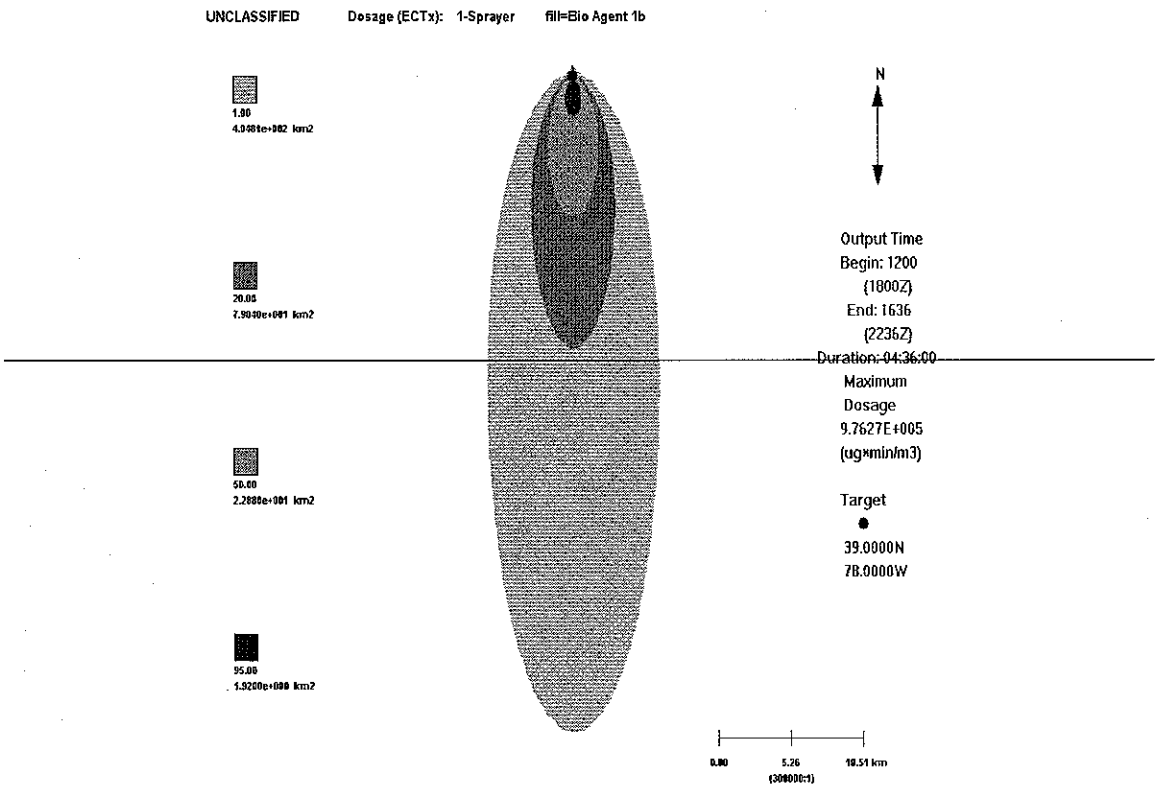
BIOLOGICAL AGENT SCENARIOS

The key question regarding IPP biological detection relates to system density and placement. The Scenario is based on the use of a single 14-liter stationary sprayer attack using anthrax. A 14-liter commercial sprayer evaluated under the US program and found to be an effective method of dissemination. This type of system has been used in all previous biological detection analysis. The technology is easily transportable, mobile and commercially available

This scenario provides an acceptable basis for determining detector density and placement. A line release will cover such a broad area that the attack is generally indifferent to numbers of sensors (line sprayers challenge detector sensitivity, rather than detector spacing).

Feasibility: Costs to produce 14 liters (~2.1 kg) dry anthrax estimated to be $250,000 (*Minimum Resource for Biological Weapons Capability* (U), Enviro Control, Inc, 1976. SECRET. Updated to 2003 dollars)

Representative BWA Contours (note scale)



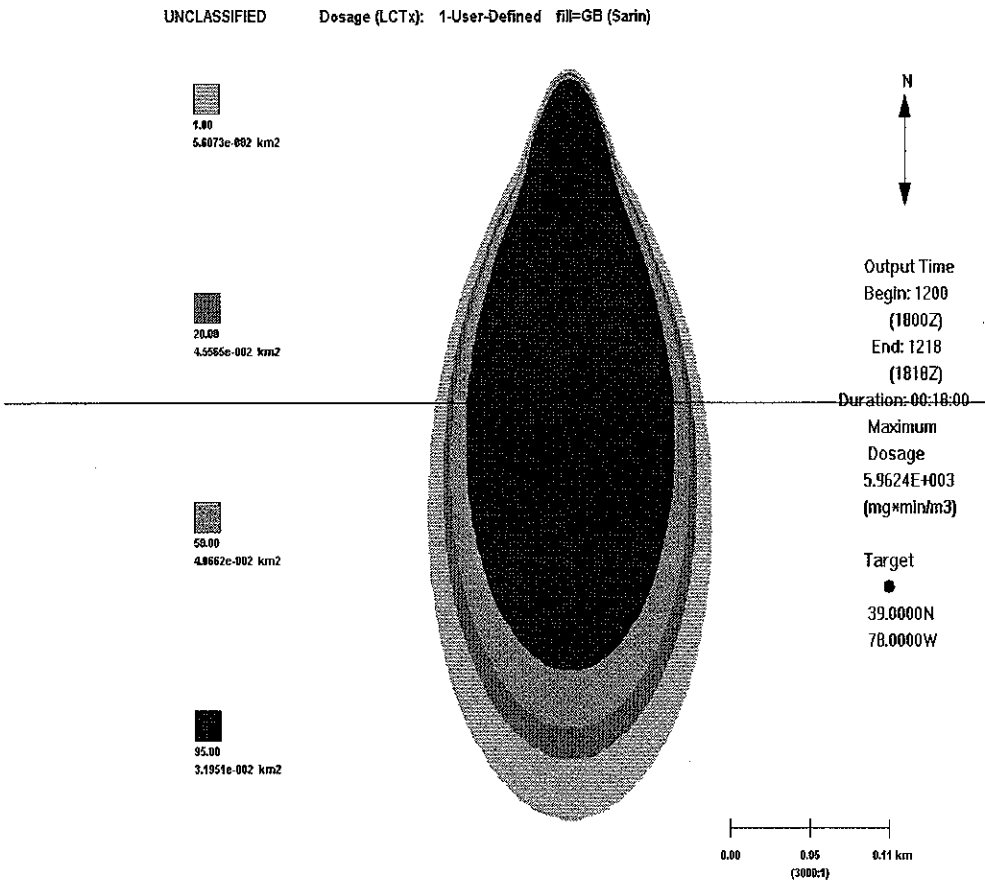
CHEMICAL WEAPON AGENT SCENERIOS

Although chemical weapons agents are very hazardous, substantially more chemical agents are required than biological agents to produce an equivalent number of casualties. Chemical weapons can be more difficult to manufacture, weaponize and effectively release than biological agent. They have a more limited downwind distance and smaller hazard area. They must be more accurately placed than biological aerosols to achieve a significant effect at the intended target. This makes the use of large quantities required to support a long line source release unlikely. For this scenario IDA has estimated that no more than 100 liters of a chemical agent can be carried by a single passenger vehicle or van.

Non-persistent chemical agents are more likely to be employed than persistent agents. Non-persistent agents are designed to result in immediate casualties of the target population. Persistent agents are more difficult to manufacture, weaponize and release than non-persistent agents. Persistent agents are primarily terrain denial weapons and are less likely to kill personnel. Sarin (GB) is a non-persistent chemical agent and has been selected as the scenario benchmark. Sarin has been produced by at least one terrorist group and is among the best documented chemical agents outside of military circles. Several open source articles indicate several well-financed terrorist groups can produce sarin.

Feasibility: Several authors have attempted to cost the production of Sarin. Although all agree that appropriate training is needed, the cost of materials is not an obstacle. A *Scientific American* article (11/5/01) estimates the cost of materials for 280 grams is $130.20, which scales to about $50,000 for 100 liters. Another report, downloaded from the Canadian Security Intelligence Center website (www.csis-scrs.gc.ca/eng/miscdocs/cbter_e.html) cites a 1986 estimate of $200,000 for 1000 kg of sarin. Scaling down to 100 liters and up to 2003 dollars produces an estimate in the range of $34,000.

Representative CWA Contours (note scale)

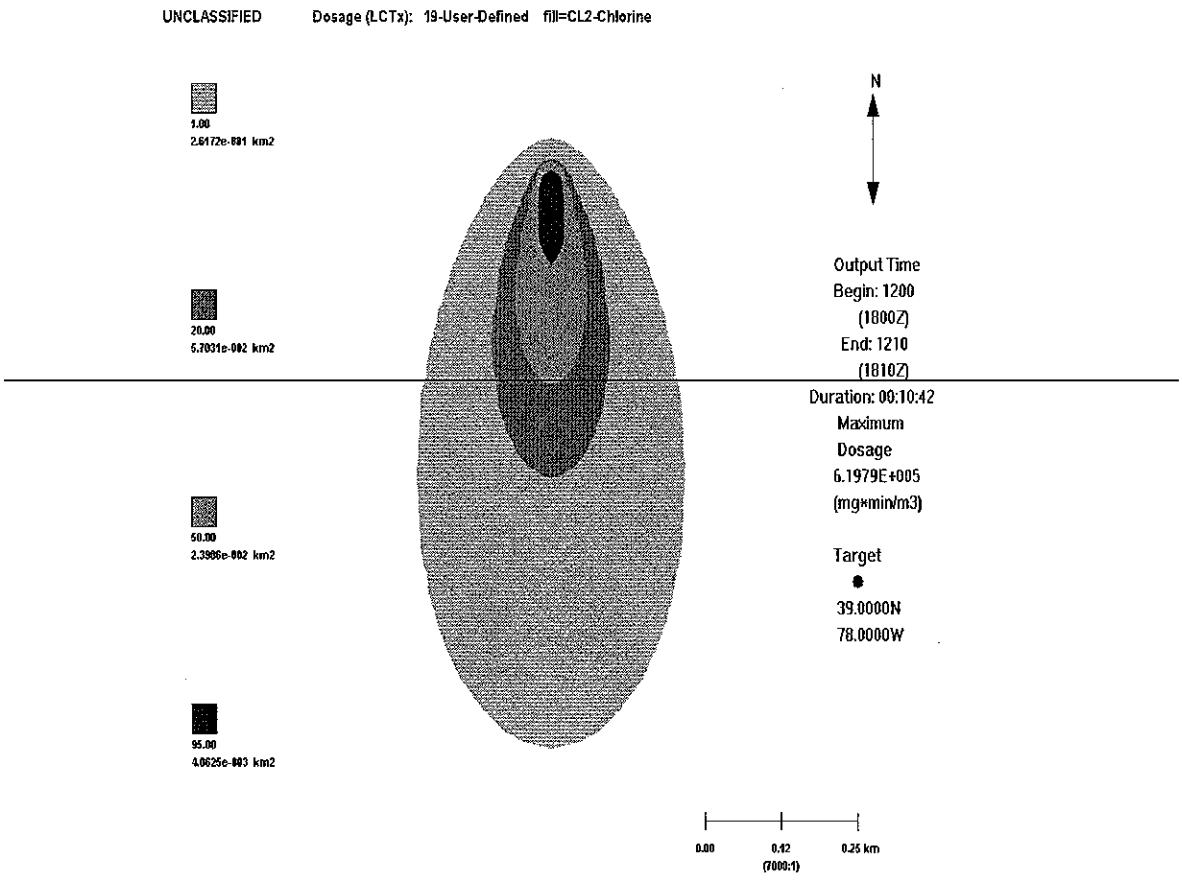


TOXIC INDUSTRIAL CHEMICAL SCENARIO

There are over 2000 toxic industrial chemicals manufactured and transported around the country. Many of these materials pass through or near DoD installations daily. The JPMG has determined that a 5000 gal tanker truck is the most likely transportation method to transit in or near a military installation and represents the most likely threat. A single TIC was also identified to support analysis efforts. It was determined that Chlorine provided a suitable representative threat to a military installation. This agent threat is realistic, viable and adequate to determine our initial baseline capability. Because the possibilities for toxic chemical release are so broad, both in terms of identity of chemical and amount released, the program will have to conduct additional analysis at each installation to better determine the actual threat.

Feasibility: Unknown, but tankers appear to be widely available or chlorine trucks could be hijacked.

Representative Chlorine Contours (note scale)



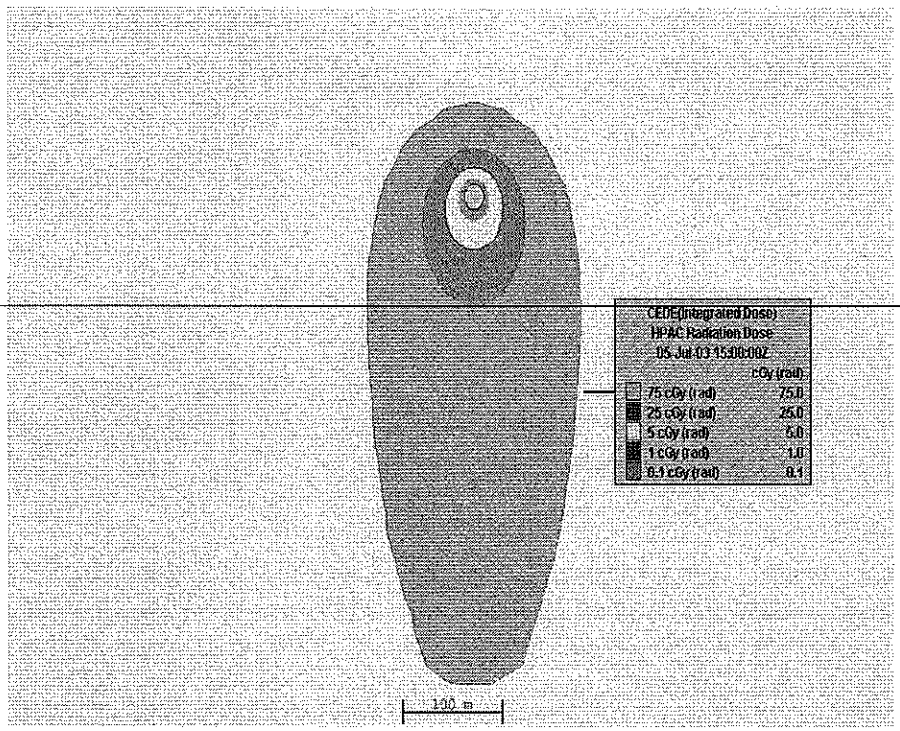
RADIOLOGICAL MATERIALS

There are a variety of gamma emitting radioactive isotopes used for medical and industrial purposes. One of the longest-lived of such isotopes, and therefore perhaps more likely to be available on secondary or black markets is cesium-137. According to the EPA web site, it is used to sterilize food products, in industrial measurement devices, and for medical diagnosis and treatment. It is possible for terrorists to acquire this material from multiple sources. As little as 100 grams of this material (5000 Ci) would be required to construct an effective Radiological Dissemination Device (RDD). This type of device would be easily hidden and transported. This amount of radioactive material, along with a few sticks dynamite or equivalent amount of explosive, would fit into a typical drywall compound bucket.

Feasibility: Although the material is licensed, there is a gray market in used devices, especially in foreign countries. The NRC cites an incident in 1987 where a device was abandoned in a former Brazilian clinic, found by salvagers who dismantled it with resulting widespread contamination.

contamination

Representative Radiological Contours (note scale)



General Threat:

For the purposes of this sample TD, the four agent releases will occur in June under the following conditions:

Time of day: 8:05 am
Atmospheric stability: Class M
Wind speed: 10 m/sec
Wind direction: S-SW 190° (for sarin)
Wind direction: NE 045° (for anthrax)
Wind direction: E-SE 110° (for CsCl)
Wind direction: N-NW 345° (for Chlorine)

Assumptions: (replace with current version of ISA)

- Attacks will be covert. In other words, we do not expect military-type attacks, such as artillery or missiles, against Guardian sites.
- Attacks will be focused against critical military operations and facilities. While attacks against the general population are a possibility, it is felt that those types of attacks could be more easily accomplished off post with greater impact.
- Although attacks of any size are *possible*, we believe that there it is possible to put an upper bound on credible attacks that can be brought to bear against a guarded military facility. We feel that an attack will be relatively small in size with limited contamination/hazard effects. Based on this it is more likely that a non-persistent rather than a persistent chemical agent will be used.
- Although persistent chemical agents can create a limited area hazardous zone, we assume that the primary goal of an attack on a military baseinstallation is to cause casualties, so the chemical warfare agents of greatest concern are non-persistent agents.
- Sites that are located adjacent to hazardous chemical production sites should already have plans in place to deal with unplanned releases at those sites, so the industrial chemical threat is an attack involving the release of material at an unforeseen location, say through the destruction of a chemical tanker truck near a site. We assume that proper security would limit a terrorist ability to gain access with a tanker truck or similar vehicle.
- Radiological devices will most likely use surplus medical or industrial radiological sources, which are widely available, combined with explosives of some kind. These are most likely to be gamma ray emitters. More exotic materials, such as plutonium or enriched uranium are likely to be more difficult to obtain. The contents of several industrial or medical devices could be combined into a radiological weapon still small enough to be smuggled onto a facility, although unless thoroughly shielded, will have a significant radiological signature.
- Although a nuclear device could cause considerable damage, we do not view it as a likely Guardian threat. Such a device would be too valuable in the hands of a terrorist organization to attempt to take it past installation security or to use it on the outskirts of an installation when much more symbolic civilian targets are provide much easier access. Also the effects of such a device would quickly overwhelm the installation. Based on

these impacts the architecture focuses on preventing entry of nuclear or radiological material on to the installation.

Biological Warfare Agents

For many years, we have analyzed biological detector requirements using a 14-liter stationary sprayer attack using anthrax. We employ stationary sprayers, rather than line sprayers, since a point release provides a basis for determining detector density, whereas a line release can cover such a broad area that one is generally indifferent to numbers of sensors (line sprayers challenge detector sensitivity, rather than detector spacing). The 14-liter sprayer was a design developed under the US program that seems a reasonable compromise between very small and very large amounts of agent. The technology is easily transportable, mobile and commercially available. Sprayers such as this could be adapted from widely available agricultural devices or home gardening equipment. Since a key question regarding biological threats focuses on detection requirements (density and placement), we have chosen to propose this threat as a benchmark for Guardian.

Chemical Warfare Agents

Although chemical weapons agents are very hazardous, substantially more chemical agents are required than biological agents to produce an equivalent number of casualties. Moreover, chemicals must be more accurately placed than biological aerosols to achieve a significant effect. Therefore, we believe that chemicals must be brought onto the installation to be effective terrorist weapons, and getting them through gate security puts a limit on how much can be brought in. We use sarin as the benchmark chemical warfare agent. Although many chemical warfare agents can conceivably be fabricated by terrorist groups, we know that sarin has been produced by at least one and is probably among the better-known chemical agents outside of military circles. Moreover, as a non-persistent agent, sarin has a greater potential for causing casualties than a persistent agent such as VX, which will create a contaminated area but is less likely to kill individuals who don't come in direct contact with it.

Several open source articles (see the briefing for sources) indicate that sarin can be produced for thefrom resources likely to be available to terrorists. To an order of magnitude, we have estimated that no more than about 100 liters can be carried by a single passenger vehicle or van. We don't envision tanker trucks of sarin being brought onto a military facility, although a passenger vehicle might get through if vehicle inspection is not regularly conducted.

Toxic Industrial Chemicals

There are many toxic chemical transported around the country daily, on roads or railroads that pass through or near DoD installations. There are also chemical production facilities near some installations that, if sabotaged, could pose a hazard that could reach those installations. Where production facilities pose a threat, that threat has to be examined in its specifics. For truck threats, we propose the benchmark amount to be 5000 gallons, a typical tanker truckload, although larger trucks exist. Although it can be argued that picking a single chemical out of the many possible is unrealistic, providing a single initial benchmark is helpful to test methodology. We have therefore selected chlorine, an inhalation hazard as the benchmark industrial chemical, and explosive release, which is fairly simple to achieve. We feel that this threat is realistic and viable and adequate to determine our initial baseline capability. Because the possibilities for toxic chemical release are so broad, both in terms of identity of chemical and amount released, we have to conduct additional analysis at each installation to better determine the actual threat.

Radiological Materials

There are a variety of radioactive isotopes used for medical and industrial purposes, most of which emit gamma and or beta radiation and have half-lives varying from hours to decades. One of the longest-lived of such isotopes, and therefore perhaps more likely to be available on secondary or black markets is cesium-137. According to the EPA web site, it is used to sterilize food products, in industrial measurement devices, and for medical diagnosis and treatment. In 1987, a medical cesium source was found as scrap in Brazil and opened, and substantial numbers of individuals were contaminated. According to a report by Lawrence Livermore Laboratory, this source contained about 1400 Ci of radioactive material. We believe that terrorists might collect several devices and combine them into a 5000 Ci source and explosively disseminate it. This is a small amount of material, less than 100 grams of material (cesium chloride). This amount, along with a few sticks dynamite or equivalent amount of explosive, would fit into a typical drywall compound bucket.

Hazard Areas

The following sections show hazard contours for the four benchmark threat capabilities. The biological, chemical weapon, and industrial chemical results were generated by the VLSTRACK model, using default parameters in the VLSTRACK database. The radiological hazard was generated using the HPAC model using default parameters in its database. Numerous modeling assumptions were made regarding terrain type, wind speeds, atmospheric stability and other factors that, if varied, could result in significantly different outcomes. However, these depictions are useful for comparing the magnitudes of these threats. Note that, except for the biological benchmark, the hazard areas are relatively small. The contours show infectious dosages (for biological) and lethal dosages (for chemical weapon agents and industrial chemical) at 1%, 20%, 50%, and 95%. For the radiological benchmark, we show integrated exterior dose in cGy for values between 0.1 and 75. For reference, the Institute of Medicine's operational exposure guidance lists 0.1 cGy as "normal risk" and 75 cGy as slightly above" significant risk."

~~1.~~

Biological Agent Threat:

Attack: 14 liters volume dry anthrax sprayer disseminated as point or short ground line.
Justification:

1)Agent: Effective dry anthrax has been used by terrorists in the US
Dissemination and amount: Agricultural and other sprayers of this volume are widely available and are used at Dugway to disseminate simulant
3)Costs to produce 14 liters (~2.1 kg) dry anthrax estimated to be $250,000 (*Minimum Resource for Biological Weapons Capability* (U), Enviro Control, Inc, 1976. SECRET. Updated to 2003

2. Conventional Chemical Agent Threat:

a. Attack: 100 liters Sarin explosively released.

b. Justification:

1) Agent: Sarin is a widely recognized highly toxic substance, the fabrication of which has been attempted by at least one terrorist group

2) Dissemination and amount: 100 liters would fit easily within an automobile for timed or remote detonation

c. Feasibility: Several authors have attempted to cost the production of Sarin. Although all agree that appropriate training is needed, the cost of materials is not an obstacle. A *Scientific American* article (11/5/01) estimates the cost of materials for 280 grams is $130.20, which scales to about $50,000 for 100 liters. Another report, downloaded from the Canadian Security Intelligence Center website (www.csis-scrs.gc.ca/eng/miscdocs/cbter_e.html) cites a 1986 estimate of $200,000 for 1000 kg of Sarin. Scaling down to 100 liters and up to 2003 dollars produces an estimate in the range of $34,000.

3. Toxic Industrial Chemical Threat:

Attack: 5000 gallon chemical truck filled with chlorine, explosively released
Justification:
Chemical: chlorine is a widely used toxic chemical
Dissemination and amount: 5000 gallons is a typical size for a chemical tanker truck. Explosive release easiest to achieve
Feasibility: Unknown, but tankers appear to be widely available or chlorine trucks could be hijacked.

4. Radiological Materials

Attack: 5000 curies Cesium-137 explosively released

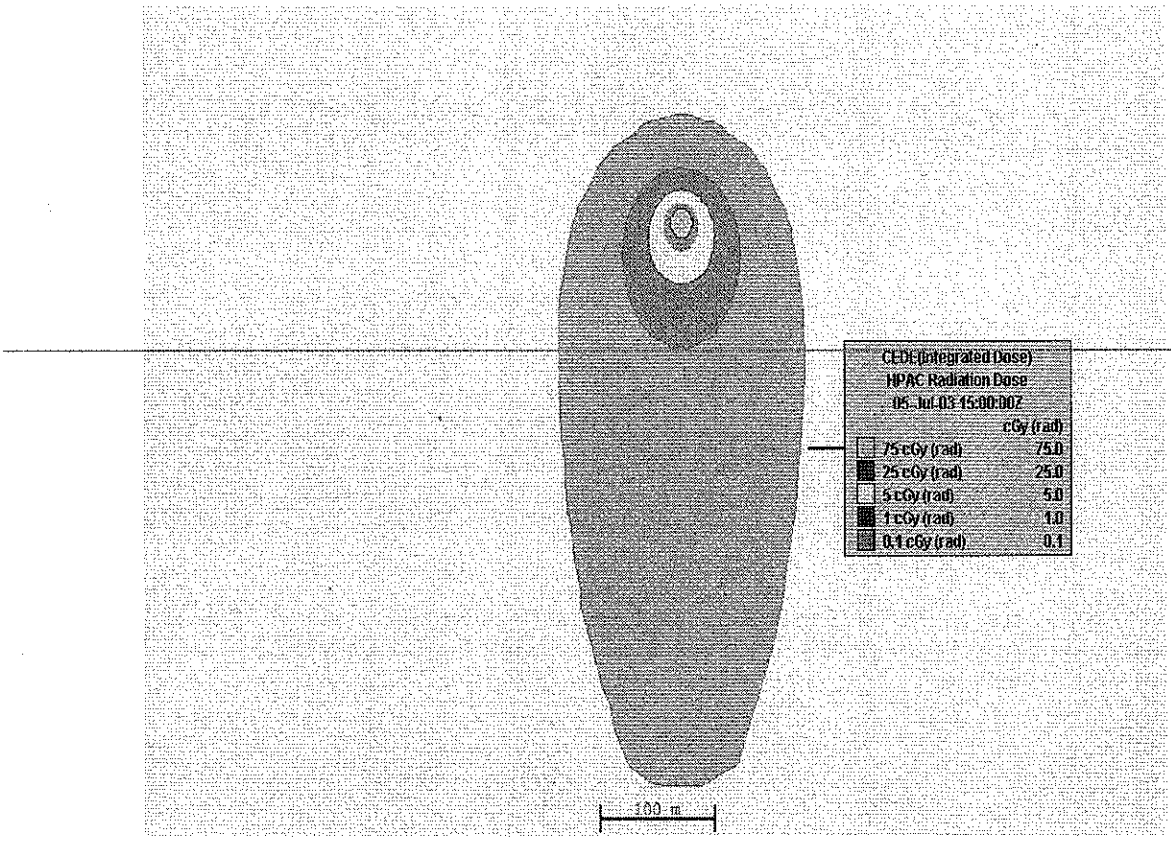
Justification

Material: Cesium-137 is a commonly used source for medical radiation therapy, often packaged as CsCl powder

Dissemination and amount: Explosive release easiest way to release. The amount can be generated by combining sources from several therapy devices, several sticks of dynamite and would fit in a five-gallon bucket

Feasibility: Although the material is licensed, there is a gray market in used devices, especially in foreign countries. The NRC cites an incident in 1987 where a device was abandoned in a former Brazilian clinic, found by salvagers who dismantled it with resulting widespread contamination

Representative Radiological Contours (note scale)



RESPONSE INFORMATION

The primary response force for the ~~installation~~Installation is the security force, with headquarters at R-1 (see Figure 3). Various security force officers are posted across the site. ~~Table 2 describes communication by the security force at SK-6.The metal detector is always on. The explosives detector is used on a random basis. After passing through the two detectors, people exit through a set of double doors into the protected area of the facility.~~

~~The metal detector is always on. The explosives detector is used on a random basis. After passing through the two detectors, people exit through a set of double doors into the protected area of the facility.~~

-Other response organizations include fire departments and hospitals. ~~Table 3 lists the locations of various responders and manpower at those locations during and outside operational hours.~~

~~Need a Security Force paragraph that discusses response CONOPS~~

Security

The security office has 72 personnel that ~~consists~~consist of 3 shifts of 24 officers. The security forces have 15 police cruisers. Each cruiser has a ~~2-way~~2-way radio in the car.

Current Security CBR Response CONOPS requires the security officers to:

- Lock down all ~~installation~~Installation gates.
- Set up an outer security perimeter in a contaminated environment.
- Preserve and protect the crime scene.
- Support the Incident Command System.

The security forces have MOAs with local and state law enforcement and have a good working relationship with federal law enforcement.

~~Table 2--Secure Area Communication Network~~

~~Communication Equipment~~

- ~~6-watt hand-held radios VHF~~
- ~~Phone lines to headquarters~~
- ~~100-watt radio at the SF HQ and Installation Command Post~~
- ~~All communications are unencrypted~~

~~Communication Procedures~~

- ~~Officers will carry a 6-watt radio with duress alarm.~~
- ~~Officers will report all disturbances to SF HQ~~

Fire Department:

The fire department includes 2 trucks, 1 ambulanceEmergency Response Vehicle (ERV)ambulance, -and 12 firefighters during operational hours. During non-operational hours there are 6 guysfirefighters. There is a 1-hour firefighter recall if needed.- Firefighters have standard firefighting equipment and appropriate hazmat HAZMAT gear for aviation operations. The aThe ERVambulanceAmbulances hasves 2 paramedics, rest are firefighters. Firefighters are trained in hazmat HAZMAT removal and decontamination for TICs found on-site., such as gasoline, aviation fuel, and chlorine. There is an Memorandum of Agreement (MOA) between the fire department and the chemical plant iChlorine is not used on base, but is a major product of the neighboring chemical facility. In the event of a chemical incident spill offsite at the chemical plant, the plant has agreed to call the fire station and alert them of the spillincident. The fire station then relays this information via phone to the- Installation Command PostEOC. (ADD STATEMENT THATThe installationInstallation -Ffire Ddepartment (fdFD) also has a MOA with the off site fdFD to respond to major events on/off post)(tony - develop an equipment set for the off post . The off-site fire department has 5 trucks, 2 ERVsambulances, 35 firefighters during operational hours, and 15 firefighters in non-operational hours. Firefighters have standard FF equipment and appropriate HAZMAT gear and are trained in HAZMAT operations. HAZMAT response capabilities include chemical and radiological survey and monitoring systems.

Hospitals

There is an on-site hospital that provides medical services to all installationInstallation personnel and their dependents. Normal hours are 7 am–7 pm, Monday through Friday, and emergency room (ER) services all other times. The ER has 3 full-time doctors, 5 nurses, 1 technician, and 5 other personnel assigned. There are two ambulances, each with a 3 -man crewmen, available on a 24/7 schedule. There is currently no stockpile of prophylaxis medications. InstallationInstallation personnel are authorized to use off-site medical facilities if needed. There is a Memorandum of Understanding with the hospital located approximately 12 miles from the installationInstallation, which can provide medical assistance if required. This hospital has 2 ambulances on duty 24/7.

H. Administrative Data

For costing purposes of labor rates, utilize Huntsville, Alabama for development of personnel cost data.

Table 3. Installation Response Sites and Staffing

Security Force	*Post Description*	*No. of Personnel*	
		Operational Hours	*Non-Operational Hours*
R-1	Security Force HQ	19	21
R-2	SK-6	3	2
R-3	EOC	5	2
R-4	Main gate (Gate 1)	2	1
R-5	Fire station (Hazmat team)	18	12
R-6	Hospital (medical staff)	20	10

Current Installation Response Processes and ProceduresConcept of Operations

There are emergency and first response policies, plans, and procedures in place at the installation. As an example, the Hazmat Response Procedure for Events Impacting the Critical Mission is outlined below:

1. Alarm is detected at R-2 location.
2. Local officer at R-2 assesses alarm to determine if it is an attack or a nuisance alarm.
3. Local officer reports incident to R-1 and R-3.
4. R-3 dispatches First Responders to take immediate action.
5. R-1 alerts security force personnel to report to R-2 to assist.
6. First Responders at R-5 and R-6 collect protective gear.
7. First Responders travel to position.
8. All First Responders take appropriate action.

Alarm or 911 call is received

Security dispatches officer

Security drives by incident site, sees sick people outside

Security notifies fire department

Fire department assesses scene, makes determination of potential terrorist incident

Fire department initiates emergency decontamination

~~Fire department initiates triage~~

~~Security department locks down all installation gates~~

~~Security department sets up outer perimeter~~

~~Incident command is established~~

~~EOC notified via watch commander~~

~~EOC notifies Hospital~~

DEFENSIVE SYSTEM CONCEPTUAL TECHNICAL DIRECTIVE PPARTIAL DESIGN SOLUTION

An analysis of the design basis threats for chemical, biological, and radiological attacks on the installation has resulted in the following Conceptual Partial Design for a defensive system.

Detector Detection Systems: A combination of chemical, biological, and radiological sensordetector systems will be deployed around and within the secure area and operated 24/7 to provide both detect-to-warn (chemical and radiological) and detect-to-treat (biological) detection capability. The location and identity of each detection system is indicated on the secure area and building site map provided in Figure 67V. These include 4 CW Sentry Plus chemical detectors, 12 ACADA Chemical Detectors, 4 AN/PD77 radiological detectors **(have bidder recommend an Rad Detector)**, and 12two DFU bio-aerosol collection system DFU bio-aerosol collection systems. Samples from the DFU bio-aerosol collection system will be collected and shipped to a laboratory facility in California every 24 hours.

Collective Protection (CP): The Controlled Room located within building SK-6 and the EOC within building SK-3 inside the secure area and the Ready Room will be protected from chemical warfare agents, biological agents and radiological particulatesairborne gas (conventional Chemical Warfare Agents and TICs) and aerosol agents by adding HEPA and chemical filtration systems to the building HVAC system. In addition, the capacity of the HVAC Air Handling Unit (AHU) will be increased to provide positive pressurization (1 inch of water minimum) of the buildingCP protected locations. Only incoming fresh air will be filtered; recirculated air within the building will be untreated. Based on an analysis of the required filtration efficiency and unit performance, the HEPA filtration unit will be acquired from Hunter Manufacturing. The chemical filtration system will employ activated carbon technology and will be acquired from SBCCOM.

Immunization: All mission critical personnel will be immunized against anthrax and smallpox.

Medical Surveillance: The ESSENCE medical surveillance softwaresystem will be accessibleinstalled at the installation hospital for installation surveillance data. In addition, on site medical treatments for chemical warfare agent exposure will be provided. .

Personal Individual Protective Equipment: All mission critical personnel and responders will be provided with lLevel C suits and PAPRsappropriate lPE. First Responders will be provided with level A or and Level B Tyvec F Level B suits orand Self Contained Breathing Apparatus (SCBA) as appropriate and. Three Interspiro Model S seSelf Ceontained Bbreathing Aapparatus (SCBA) systems will be provided for use by the secure area protective force officers. All critical mission military first responderspersonnel will be equipped with government issued protective suits.

Decontamination: Personnel and area decontamination equipment is not available and is requirednel, technicalnel,limited equipment, and limitedand limited. Personnel and area dDecontamination equipment is not available and is required. (ADD A SECTION THAT

PRIORITIZES WHAT GETS DECON'D FIRST AND WHERE, AMBULATORY/NON-AMBULATORY, ETC) In the After an eventevent of a successful attack, the, C2@ secure area getsreceives immediate attention for decontamination. In parallel with this effort, mission critical ambulatory personnel are decontaminated andat a treated at the installationatment area in hospital. Non-ambulatory mission critical casualties are taken to an isolation area at installation hospital for decontamination. There is an agreement with the community hospital that they will send medical personnel to assist the installation medical personnel. Selected areas within the secure area but outside of the building will be decontaminated using DF200 fluid. Selected areas within the building will be decontaminated using commercially available foam. Interior areas of hangars and the Ready Room will also be decontaminated using commercially available foam.

CURRENT INSTALLATION CONCEPT OF OPERATIONS

Alarm or 911 call is received

Security dispatches officer

Security drives by incident site, sees sick people outside

Security notifies fire department

Fire department assesses scene, makes determination of potential terrorist incident

Fire department initiates emergency decontamination

Fire department initiates triage

Security department locks down all installation gates

Security department sets up outer perimeter

Incident command is established

EOC notified via watch commander

EOC notifies Hospital

Existing Concept of Operation (CONOPS):

The C4I system The optimized final design solution CONOPS and supporting C4I architecture and systems solution may use or extend the existing architecture.for the Guardian Technical Directive will be based on a CONOPS which must be expanded upon based on the proposed upgrades for the Installation.

(LEVERAGE EXISTING COMMO DEVICES FOR INTEROPERABILITY)
There is no alarm communication and display system for the Aircraft Flight line Complex
There is a mix of radios on the Installation. The mix of radios can be modified but the security forces use older VHF radios. The Aircraft Maintenance SF haves Motorola UHF radios. There is a mixture of CENTRACOM GOLD Elite, XTS 3000 and XTS 5000 digital and analog communications devices.
The telephone system is old and does not provide ISDN capability to all base facilities.
Cell phone coverage is good at the Southwest corner of the base but falls off rapidly as you get away from the Leadville cell towers.
All Command and Control and Major Facilities have access to NIPRNET.
There is an old Intercom in the secure area complex.
There is a Base Command Post, which is fully manned during duty hours and has a duty officer on duty at night.
All sensor data is terminated locally at the alarm monitoring station of the secure area.
There is no central AT/FP command and control system.

1) Samples from the DFU bio-aerosol collection system will be collected and shipped to a laboratory facility in California every 24 hours. If a sample tests positive for a biological contaminant, appropriate prophylaxis will be initiated for all installation personnel. Mission critical personnel will continue their normal operations. In addition, surface samples within the building will be collected within 8 hours to establish the degree of contamination that may have occurred within the building due to penetration of the HEPA filtration and foot traffic from building occupants entering from the contaminated environment outside of the building.
Restoration operations will commence within 24 hours.
Upon alarm of the chemical or radiological sensor systems,
the protective force officers in the secure area outside of the building will put on their SCBA systems and remain on alert in their assigned positions. Protective force officers inside of the building will put on their SCBA systems and move to secure the main entrance to the facility to ensure that no one enters or exits the building. Mission critical personnel will put on their protective suits and move to a central area to await further instructions. No one will enter or exit the building for one hour after the outside sensors indicate contamination. The road leading from the perimeter of the secure area to the shipping/receiving entrance will be decontaminated with DF200 within 8 hours to allow safe entry and exit of mission critical personnel. Installation personnel outside of the secure area will be alerted and will either remain in their current building or proceed to the nearest structure and remain inside until the outside sensor systems indicate that contamination levels have dropped below the level of detectability.

2) Upon alarm of the chemical or radiological sensordetector systems, CONOPS need to be developed to define the reporting and warning protocol. Appropriate decision support tools need to be utilized to ensure effective and efficient operation of the FoS.

Upon alarm of the chemical or radiological detector systems, the protective force officers security force at either SK-6 or SK-3 will put on their SCBAPPEIPE systems and remain on alert in their assigned positions. ProtectivSecuritye force officers inside the buildings will put on their SCBAPPEIPE systems and move to secure the main entrance to the facility to ensure that no one enters or exits the building. Mission critical personnel will put on their protectivePPEIPE suits and await further instructions. No one will enter or exit the building until the outside sensordetector systems indicate that contamination levels have dropped below the level of detectability. After levels have dropped to an acceptable level, the road leading from the perimeter of the secure area to the roll-up door entrance will be decontaminated within 8 hours to allow safe entry and exit of mission critical personnel. Installation personnel outside of the secure area will be alerted and will either remain in their current building or proceed to the nearest structure and remain inside until the outside sensordetector systems indicate that contamination levels have dropped below the level of detectability.

Samples from the DFU bio-aerosol collection system will be collected and shipped to a laboratory facility in California every 24 hours. If a sample tests positive for a biological contaminant, appropriate prophylaxis will be initiated. Non-mission critical personnel will be evacuated from the installation and will not return until wide area decontamination has been achieved (beyond Guardian scope). Mission critical personnel will continue their normal operations. The road leading from the perimeter of the secure area to the roll-up door entrance will be decontaminated within 8 hours to allow safe entry and exit of mission critical personnel. In addition, surface samples within the building will be collected within 8 hours to establish the degree of contamination that may have occurred within the building. Contaminated surfaces inside of the building will be cleaned within 24 hours.

Figure 1 Military Installation and Surrounding Area

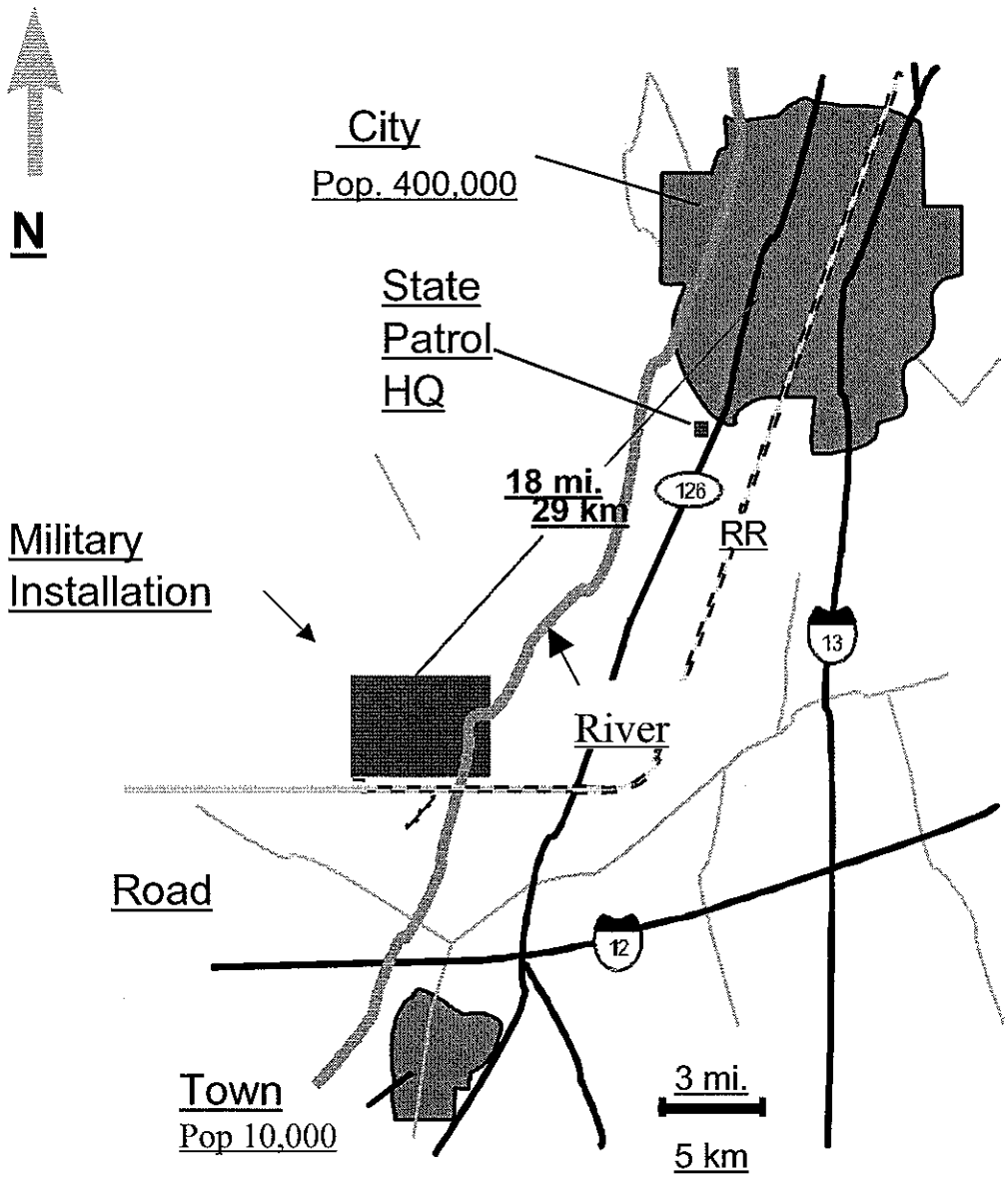
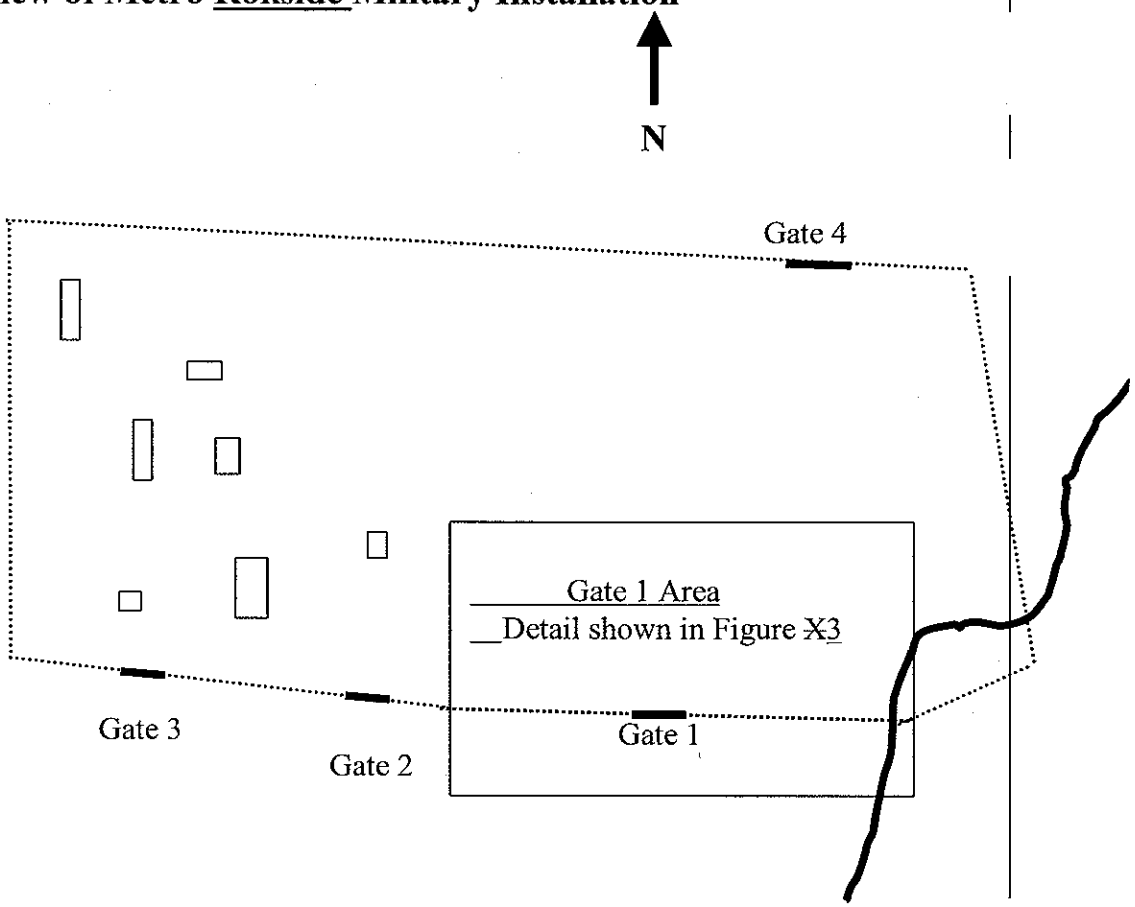


Figure 2 Overview of ~~Metro Rokside~~ Military Installation



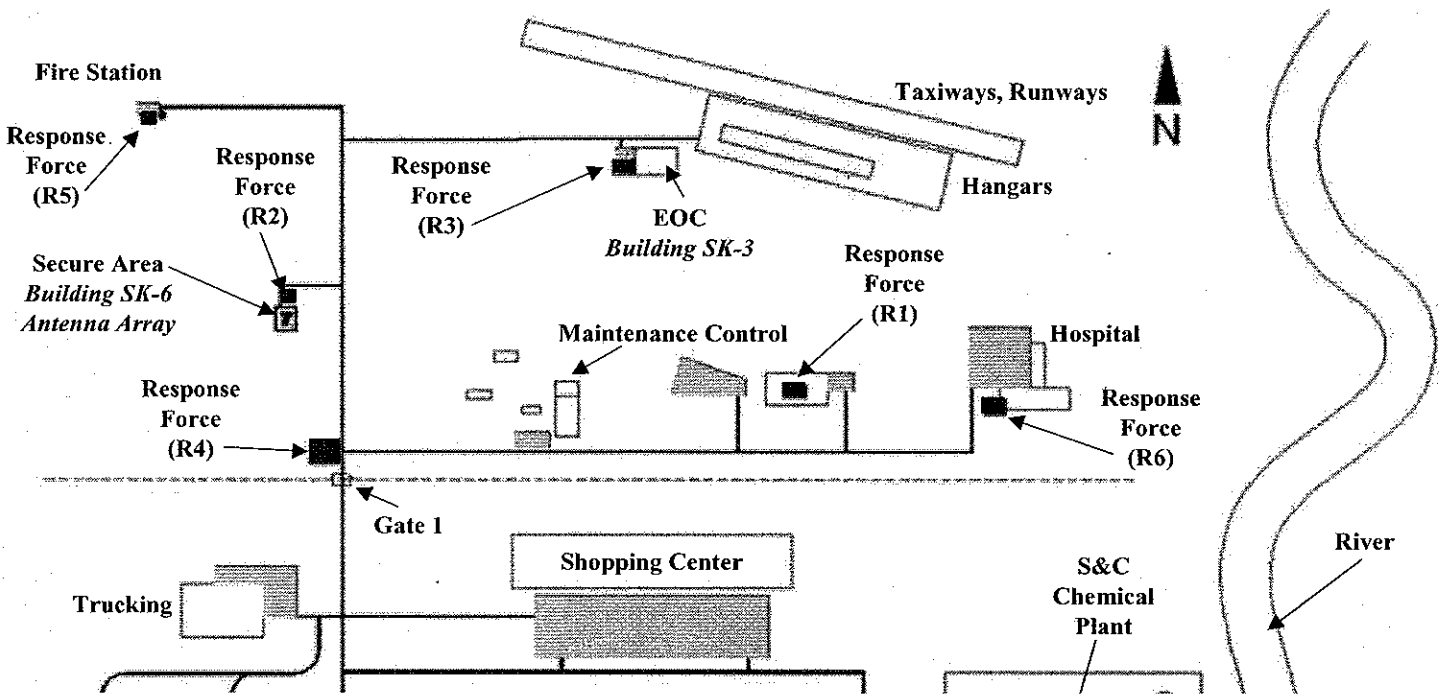
Installation perimeter fence

~~Show Gate 1~~

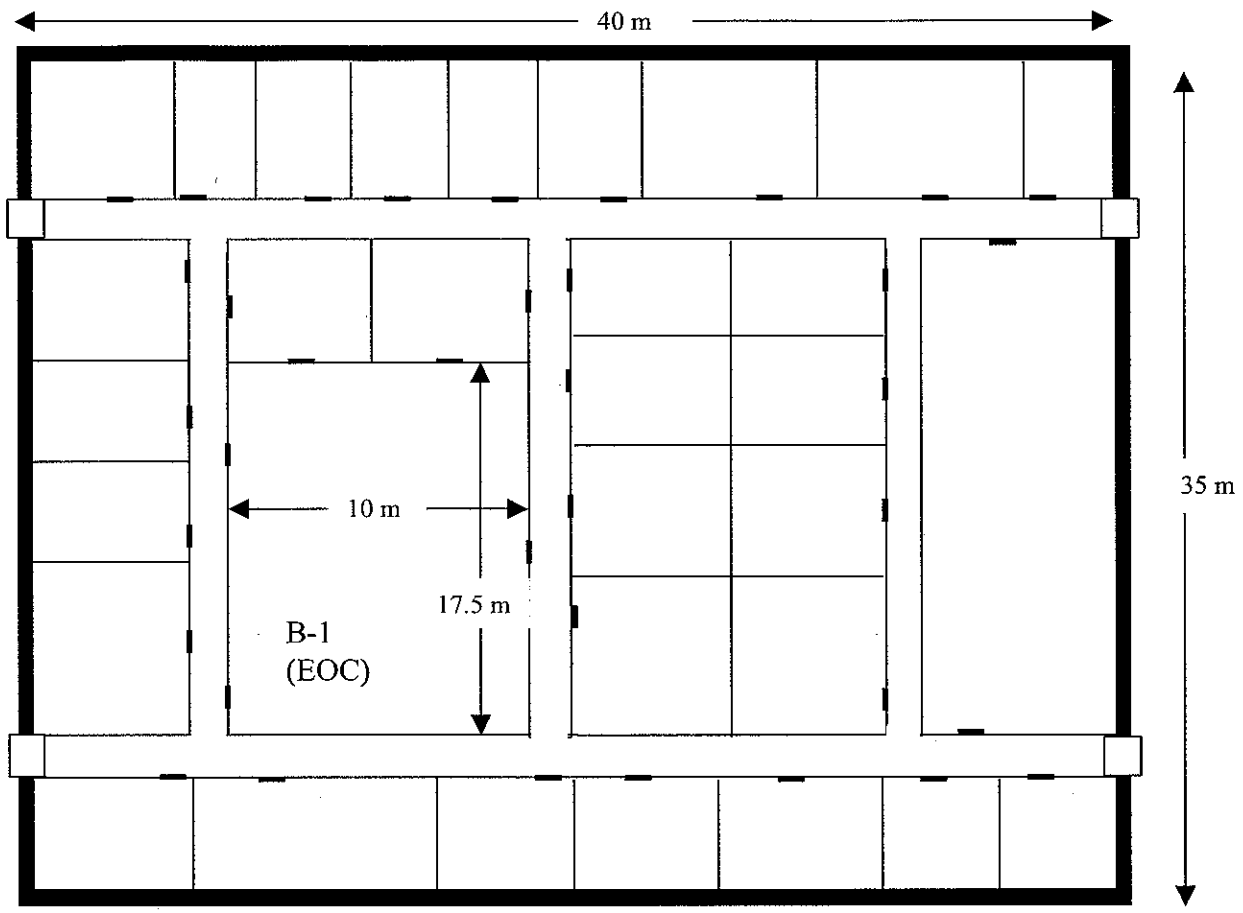
~~The following information summarizes the threat spectrum created for the installation. The design basis threat is the medium level. Threat scenarios used for the problem solution are listed below the table.~~

~~Threat Level~~	~~Adversary Characteristics~~
~~High~~	~~Adversaries at this level are defined as 10-15 people, 1 insider, heavy arms, hand/power tools, high explosives, highly motivated (willing to die or kill to achieve target), technically competent, highly skilled, multiple vehicles and multiple teams possible. The CBRN threat at this level includes 4 lbs anthrax, 200 gallons sarin, 200 lbs mixed radioactive waste, 2000 gallons of chlorine, or a 0.5 KT nuclear weapon (improvised).~~
~~Medium~~	~~Adversaries at this level are defined as 5-10 people, 1 insider, large handguns, hand and some power tools, will break off attack if detected, might fight to get away. The CBRN threat at this level includes 2 lbs anthrax, 100 gallons of sarin, 100 lbs mixed radioactive waste, or 1000 gal chlorine.~~ ~~Note: Vehicle bomb also in this category – commercial vehicle up to 5000 lbs with 200 lbs TNT-equivalent.~~
~~Low~~	~~Adversaries at this level are defined as 1-5, no insider, hand tools, probably no weapons, will run if detected, no resistance if confronted, unsophisticated, limited technical competence. The CBRN threat at this level includes 0.2 lbs anthrax, 10 gal sarin, 10 lbs mixed radioactive waste, or 100 gallons of chlorine.~~

Figure 3 Military Installation Site Plan- Gate 1 Area Detail



~~Figure 8 SK-3 Building and Floor Plan~~



30 cm concrete

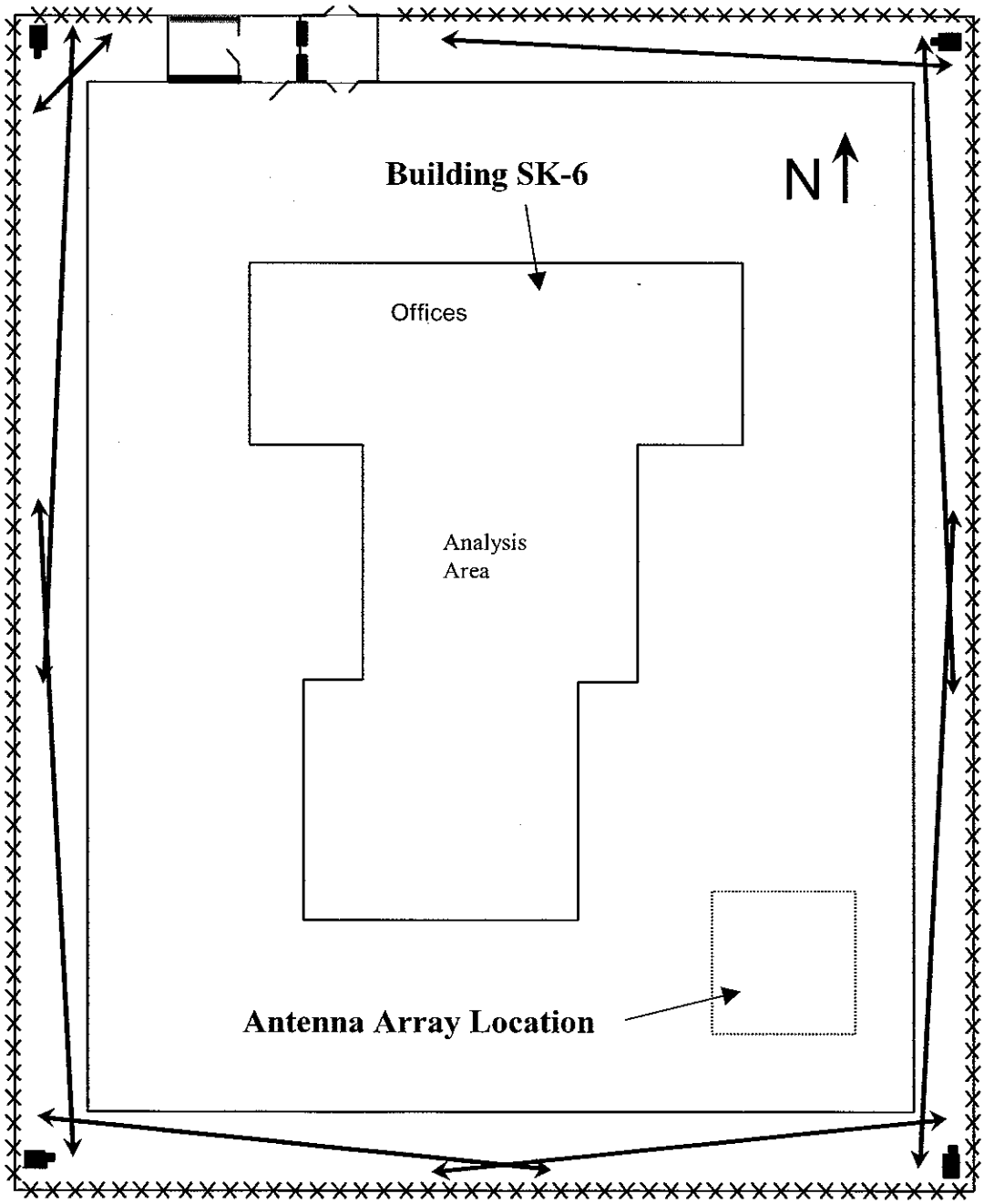
Sheetrock wall

Standard exterior double entry door

Standard wood interior door

~~Figure 4 Secure Area Exterior Protection Plan~~

Figure 4 Building SK-6 Layout



microwave detection pattern

× fence motion sensors

CCTV (fixed-position; no motion detection)

~~Threat scenarios—Path of Adversaries for Successful Attack~~

~~Chem1—on secure area (inside), sarin attack on secure area. Group of six adversaries cut hole in installation perimeter fence, run to secure area, penetrate isolation zone, run into receiving area, run to inner door, open it and disperse sarin. Daytime attack (when staff is present).~~

~~Rad—Enter installation using pickup truck or large SUV through Gate 4. Vehicle contains 100 pounds of mixed radioactive material (cesium, radium, etc) and explosives (100 lbs of TNT). Vehicle approaches runway, and is detonated. Prevailing wind used to distribute across runway, buildings and equipment. Night attack (placement and detonation).~~

~~Chem2—TIC attack, outdoor attack from chemical plant accident offsite, using tanker truck. 1000 gallons that is intentionally spilled to attack pilots and maintenance crews. Evening or shift change attack.~~

~~Bio—2 kilogram of anthrax distributed outside pilot's ready room, by 5 adversaries. Bring it onto base in a commercial vehicle (for example, bottled water vendor), drive to PRR building, spray around building, on surfaces, in vents, etc. Daytime attack.~~

Figure 5—5 SK-6 Secure Area ~~Wall Thickness and Distance~~Interior Layout

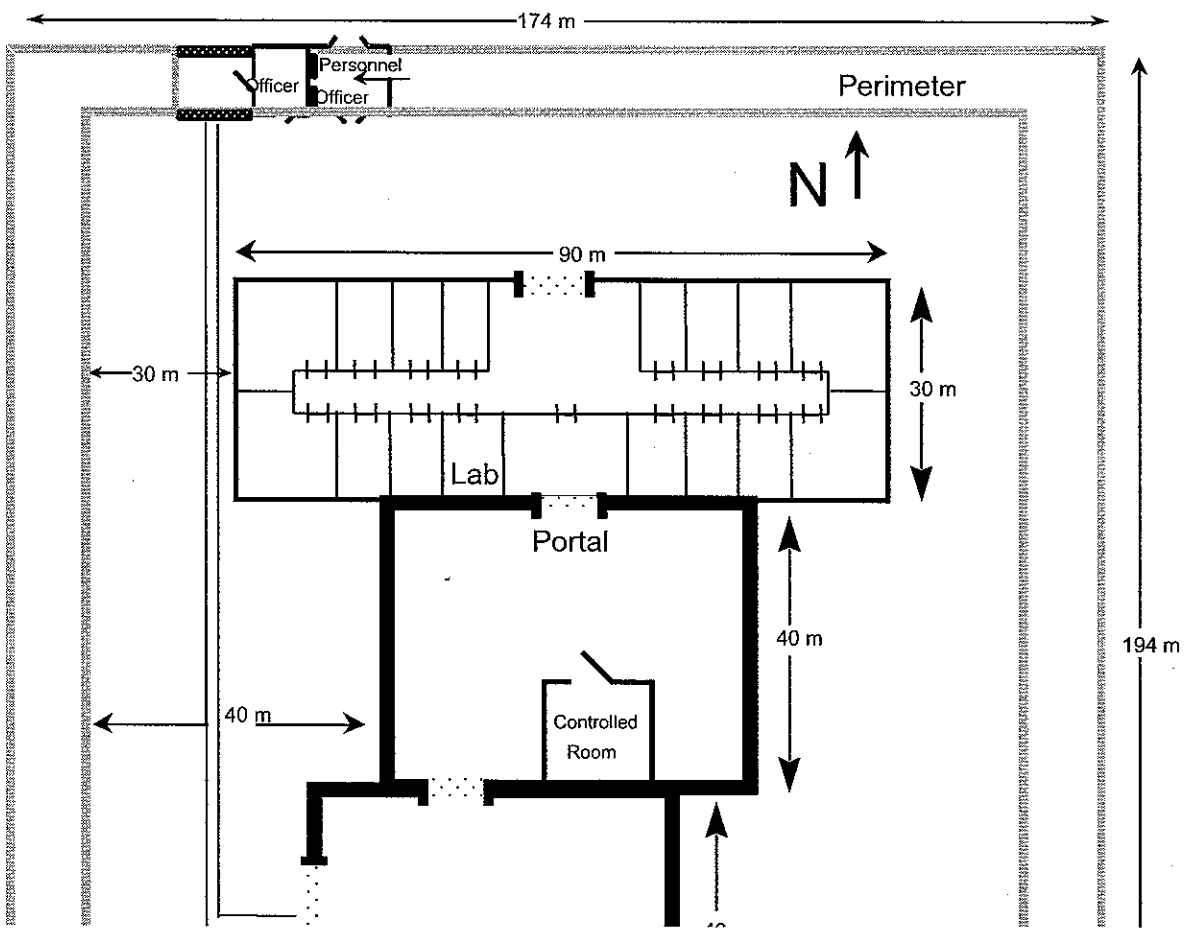
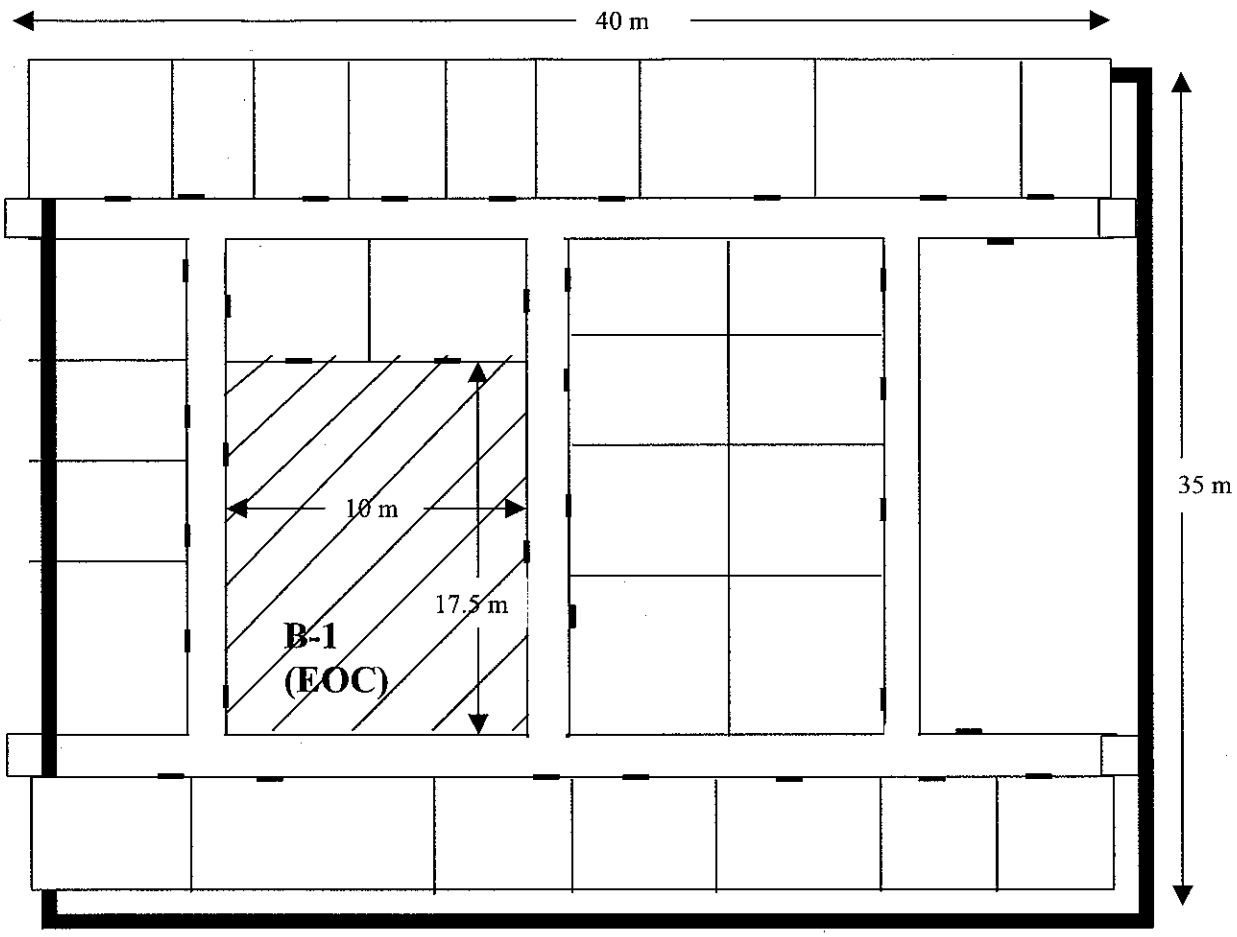


Figure 6 SK-3 Building and Floor Plan



LEGEND

- 30 cm concrete
- Sheetrock wall
- Standard exterior double entry door
- Standard wood interior door
- B-1 EOC

III. GOVERNMENT'S PARTIAL SOLUTION

A. CBRN CAPABILITY DESCRIPTION

The information provided in this section represents a minimal partial Installation protection solution. This information will be utilized to develop a more complete Installation protection plan.

Detection Systems: A combination of chemical, biological, and radiological detector systems will be deployed around and within the secure area and operated 24/7 to provide both detect-to-warn (chemical and radiological) and detect-to-treat (biological) detection capability. The location and identity of each detection system is indicated on the secure area and building site map provided in Figure 7. These include Chemical Detectors, bio-aerosol collection systems, and radiological detection systems. The chemical detectors are hard-wired to the operations computer-monitoring system located within the EOC and are connected to audible and visual alarms within the localized area of the sensor.

Collective Protection (CP): The Controlled Room located within building SK-6 and the EOC within building SK-3 will be protected from chemical warfare agents, biological agents and radiological particulates. In addition, the capacity and condition of the HVAC system will be augmented to provide positive pressurization of the CP protected locations.

Medical: The ESSENCE medical surveillance software will be accessible at the Installation hospital for Installation surveillance data. There is an agreement with the community hospital that they will send medical personnel to assist the Installation medical personnel. In addition, on-site medical treatments for chemical warfare agent exposure will be provided.

Individual Protective Equipment: All mission critical personnel and responders will be provided with appropriate IPE. Responders will be provided with Level A or Level B suits and Self Contained Breathing Apparatus (SCBA) as appropriate. All critical mission military personnel will be equipped with military issued protective masks and suits.

Decontamination: Personnel and area decontamination equipment is not provided in the Government's partial solution. The offeror is expected to provide a capability to support personnel, technical and limited terrain decontamination.

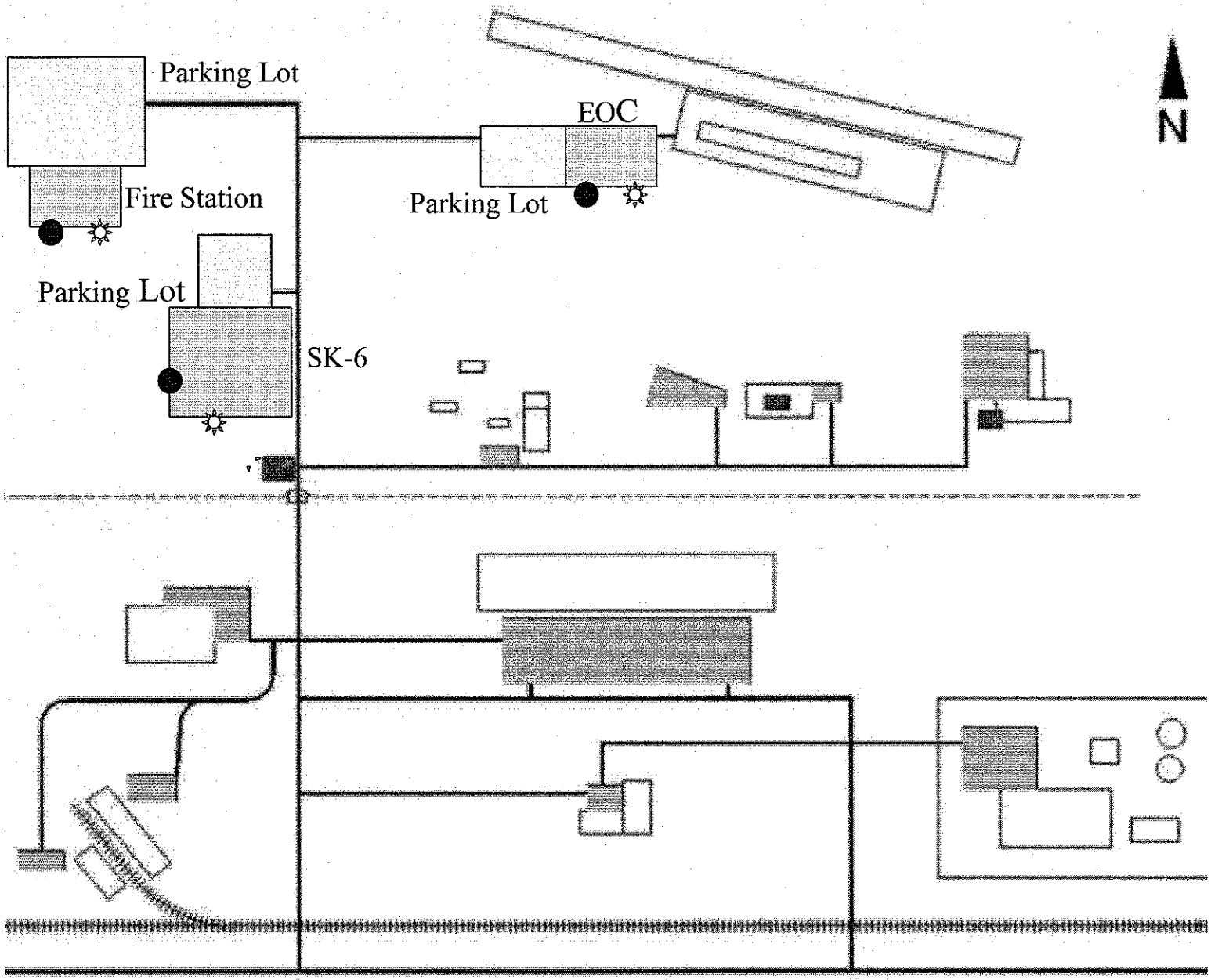
C4I: The base NIPRNET can support additional Guardian requirements. Response personnel (HAZMAT, Security and Medical) are notified of an incident by the EOC via telephone.

B. -CONCEPT OF OPERATIONS

The following information represents the CONOPS for the Government's Partial Solution. This information will be utilized to support the development of a more complete concept of operation as required in Section M of the Request for Proposal.

- Alarm or 911 calls is received.
- Security dispatches officer.
- Security drives by incident site, sees sick people outside.
- Security notifies fire department.
- Fire department assesses scene, makes determination of potential terrorist incident.
- Fire department initiates emergency decontamination.
- Fire department initiates triage.
- Security department locks down all Installation gates.
- Security department sets up outer perimeter.
- Incident command is established.
- EOC notified via watch commander.
- EOC notifies Hospital.

Figure 6—7 Partial Site Plan with Detector Systems ~~and Release~~ Locations



Chemical Detector

Note: Buildings Not to Scale

DFU

~~**Figure 7 - Secure Area Interior Floor Plan with Detector Systems**~~