



DEPARTMENT OF THE AIR FORCE  
36TH MEDICAL OPERATIONS SQUADRON (PACAF)

3 Jun 13

MEMORANDUM FOR 36 EAMXS/MXAASB  
36 EAMXS/CC

FROM: 36 MDOS/SGOAB

SUBJECT: Radioactive Material Storage Survey – Hangar 1 (Storing Sniper Pods)

1. On 15 May 13, SSgt Kristian Atkinson performed a radioactive material storage survey at Hangar 1. The facility is located on the flightline and being used to store five (5) Sniper Pods under USAF Radioactive Material Permit No. ND-00693-00/00AFP. This memorandum summarizes our assessment.
2. The survey was performed in accordance with AFI 48-148, *Ionizing Radiation Protection*. We observed the following:
  - a. Radiation levels in the area are below radiation exposure standards for the general public (2 millirem in any one hour and radiation dose not exceeding 100 millirem in a year). Additional details can be found in Attachment 1, *General Purpose Ionizing Survey Form*.
  - b. All postings met regulatory requirements. Warning signs and markings posted around the storage area includes: "Caution Radioactive Material" sign, emergency contact list, displaying names, agencies, phone numbers to contact in the event of a radioactive material emergency, NRC Form 3, *Notice to Employees*, and NRC Form 3 Supplement that lists the applicable permit number and point of contact to view the listed permit.
3. We recommend continue to secure and lock the hangar and Pod caskets at the end of duty day.
4. Please contact our office at DSN 366-7166 if there are any changes or concerns.

A handwritten signature in black ink, appearing to read "Khai H. Vuong", is written over a horizontal line.

KHAI H. VUONG, Maj, USAF, BSC  
Installation Radiation Safety Officer

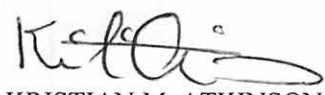

2 Attachments:

1. General Purpose Ionizing Survey Form
2. Dose Rate Calculation Table

Attachment 1

GENERAL PURPOSE IONIZING SURVEY FORM			
WORKPLACE ID: 36 EAMXS		DATE: 15 May 13	
BASE: ANDERSEN AFB		ORGANIZATION: 36 MXG	
WORKPLACE: 36 EAMXS			
BUILDING NUMBER: Hangar 1		ROOM/AREA: Main Bay	
EQUIPMENT USED			
Manufacturer	Model Number	Serial Number	Date Calibrated
Fluke Biomedical	451P	0000001862	16 Jul 12
STORAGE AREA SKETCH AND MEASUREMENTS:			
Radioactive Material Storage Area, Hangar 1 (Flightline)			
Survey Location	Description	Results	
1	Front of Pods (surface)	8 $\mu$ R/h	
2	1 meter in front of Pods	5 $\mu$ R/h	
3	Left side of Pods	17 $\mu$ R/h	
4	Back of Pods	21 $\mu$ R/h	

Attachment 2

DOSE RATE CALCULATION TABLE		
Radioactive Material (RAM) Storage Location	Maximum Meter Reading Outside RAM Storage Location	Background Radiation Measurement
Front of Pods (surface)	8 µR/hr	3 µR/hr
1 meter in front of Pods	5 µR/hr	3 µR/hr
Left side of Pods	17 µR/hr	3 µR/hr
Back of Pods	21 µR/hr	3 µR/hr
<p><i>(Please note the following assumption for calculations below: 1 mrem = 1 mR.)</i></p> <p><b>Dose Rate Formula #1,</b>                      Hourly Exposure Rate: (Maximum Meter Reading) - (Background Reading) x (Occupancy Factor)                      8 uR/hr – 3 uR/hr = 5 x 0.0625= 0.3125 uR/hr or an hourly dose of 0.0003 mrem/hr                      5 uR/hr – 3 uR/hr = 2 x 0.0625= 0.125 uR/hr or an hourly dose of 0.0001 mrem/hr                      17 uR/hr – 3 uR/hr = 14 x 0.0625= 0.875 uR/hr or an hourly dose of 0.0009 mrem/hr                      21 uR/hr – 3 uR/hr = 18 x 0.0625= 1.125 uR/hr or an hourly dose of 0.0011 mrem/hr</p> <p><b>Dose Rate Formula #2</b>                      Weekly Dose Rate Formula: (Hourly Exposure Rate) x (Shift Length in Hours) x (5 Day Work Week)                      (0.0003) x (8) x (5) = a weekly dose of 0.012 mrem/week                      (0.0001) x (8) x (5) = a weekly dose of 0.004 mrem/week                      (0.0009) x (8) x (5) = a weekly dose of 0.036 mrem/week                      (0.0011) x (8) x (5) = a weekly dose of 0.044 mrem/week</p> <p><b>Dose Rate Formula #3,</b>                      Annual Dose Rate Formula: (52) x (Weekly Dose Rate)                      (52 weeks/year) x (0.012 mrem/week) = an annual dose of 0.624 mrem/year                      (52 weeks/year) x (0.004 mrem/week) = an annual dose of 0.208 mrem/year                      (52 weeks/year) x (0.036 mrem/week) = an annual dose of 1.872 mrem/year                      (52 weeks/year) x (0.044 mrem/week) = an annual dose of 2.288 mrem/year</p>		
Dose Rate Limit	Highest Calculated Dose Rate	Dose Rate Limit Exceeded?
2 mrem/hr	0.0011 mrem/hr	No
100 mrem/year	2.288 mrem/year	No
<b>PREPARED BY</b>		<b>REVIEWED BY</b>
 KRISTIAN M. ATKINSON, SSgt, USAF Bioenvironmental Engineering Craftsman		 KHAI H. VUONG, Maj, USAF, BSC Installation Radiation Safety Officer