DEPARTMENT OF THE ARMY
U.S. ARMY INSTITUTE OF PUBLIC HEALTH
5158 BLACKHAWK ROAD
ABERDEEN PROVING GROUND MD 21010-5403

24 JAN 2012

Health Physics Program

Ms. Jill Segraves
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Dear Ms. Segraves:

Enclosed is a copy of the report Radiation Protection Consultation No. 26-MF-0E7K-11.

Please contact us if this report or any of our services did not meet your needs or expectations.

For more information concerning the report, please contact this Institute's Health Physics Program at [redacted]

Sincerely,

[redacted]
Portfolio Director
Occupational Health Sciences

Enclosure

USAPHC
U.S. ARMY PUBLIC HEALTH COMMAND
5158 Blackhawk Road, Aberdeen Proving Ground, Maryland 21010-5403

# RADIATION PROTECTION CONSULTATION NO. 26-MF-0E7K-11
# RAPISCAN SECURE 1000 SINGLE POSE DOSIMETRY STUDY
# TRANSPORTATION SECURITY ADMINISTRATION
# ARLINGTON, VA
# 21 APRIL 2010 - 17 AUGUST 2011



Radiation Safety Surveys: 385-10o

**DEPARTMENT OF THE ARMY**
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# EXECUTIVE SUMMARY
# RADIATION PROTECTION CONSULTATION NO. 26-MF-0E7K-11
# RAPISCAN SECURE 1000 SINGLE POSE DOSIMETRY STUDY
# TRANSPORTATION SECURITY ADMINISTRATION
# ARLINGTON, VA
# 21 APRIL 2010 - 17 AUGUST 2011

1. PURPOSE. This dosimetry study was performed to evaluate potential radiation doses in and around the Rapiscan Secure 1000 Single Pose (SP) personnel security screening system. The study addresses the following:

a. The potential radiation doses to individuals screened by the Secure 1000 SP.

b. The potential radiation doses to system operators and bystanders.

c. The relationship between dosimeter measurements made just inside the inspection zone to measurements made just outside the inspection zone.

d. The results of area monitoring at six airports currently using the Secure 1000 SP for passenger screening.

2. CONCLUSION.

a. The Secure 1000 SP meets radiation dose per screening limit of 25 microrem for general-use system as specified in American National Standards Institute/Health Physics Society (ANSI/HPS) N43.17-2009, *Radiation Safety for Personnel Security Screening Systems Using X-Ray or Gamma Radiation*. Members of the traveling public and airport/airline employees who are required to be screened can be screened approximately 5,000 times per year without exceeding the annual dose limit of 25 millirem (mrem) specified in ANSI/HPS N43.17-2009 (this limit is set at one-quarter of the recommended annual public dose limit).

b. The potential doses to system operators and bystanders are well below the occupational dose limits and also well below Transportation Security Administration's administrative goal of 100 mrem in a year (this administrative goal is set at the recommended annual dose limit for the general public).

c. Personal monitoring is not required around the Secure 1000 SP. Personal monitoring is required under OSHA regulation for any individual likely to receive a dose in excess of 25 percent of the quarterly dose limit (or 312.5 mrem per quarter which

equals 1,250 mrem per year). Even under maximum exposure scenarios, individuals working around the Secure 1000 SP could not receive a dose that approaches a regulatory limit that would require monitoring.

3. RECOMMENDATIONS.

a. The systems should be operated in accordance with the requirements of ANSI/HPS N43.17-2009. This includes annual surveys that ensure the system is in compliance with the radiation dose limits of the standard. These surveys should ensure the:

(1) Proper alignment of the master and slave units (i.e., that the x-ray beam does not extend beyond the “wings” at each corner of the inspection zone).

(2) Presence of 1 mm or more aluminum equivalent filtration.

b. Only the individual being screened should be inside the inspection zone (delineated by the yellow border) during screening. However, the operator may reach into the inspection zone to assist an individual, in the event of an emergency. In any event, an operator’s entry into the inspection zone when a scan is in progress should be minimized.

c. A single individual should not be screened more than 5,000 times in a year.

(1) It is extremely unlikely that a member of the traveling public would be screened this many times. Even a frequent flier who flies daily would not be expected to be screened more than 5,000 times in a year.

(2) If airport/airline employees are required to be screened under airport security guidelines and could approach 5,000 screening in a year, then a more formal evaluation of the number of times they are screened would be necessary.

d. If area monitoring is performed around additional Secure 1000 SP systems, the dosimeters should be mounted on the system “wings” as close to the outside edge as possible and 1 meter from the floor. The dosimeters may be placed in small plastic bags without significantly affecting the measurements.

(1) The dosimetry provider should be provided with as much information about the radiation field as possible to allow proper assessment of the radiation dose. At a minimum, the dosimetry provider should be informed that the radiation field contains

only x-rays. Additional information on the x-ray energy and system filtration is also useful.

(2) The measurements from such area monitoring should be normalized on a per screening basis and compared to the maximum values in Table E.12, Appendix E of this report. Values higher than those reported in Appendix E do not necessarily indicate a radiation hazard. However, further investigation should be conducted to determine the cause of any such future elevated measurements.

RADIATION PROTECTION CONSULTATION NO. 26-MF-0E7K-11
RAPISCAN SECURE 1000 SINGLE POSE DOSIMETRY STUDY
TRANSPORTATION SECURITY ADMINISTRATION
ARLINGTON, VA
21 APRIL 2010 - 17 AUGUST 2011

1. REFERENCES. A list of references is provided in Appendix A.

2. ABBREVIATIONS. A list of abbreviations used in this report is provided in Appendix B.

3. PURPOSE. This dosimetry study was performed to evaluate potential radiation doses in and around the Rapiscan Secure 1000 Single Pose (SP) personnel security screening system. The study addresses the following:

a. The potential radiation doses to individuals screened by the Secure 1000 SP.

b. The potential radiation doses to system operators and bystanders.

c. The relationship between dosimeter measurements made just inside the inspection zone to measurements made just outside the inspection zone.

d. The results of area monitoring at six airports currently using the Secure 1000 SP for passenger screening.

4. AUTHORITY. Memorandum of Agreement between the U.S. Army Medical Command and the Transportation Security Administration (TSA), signed September 10, 2008;

5. BACKGROUND.

a. System Description.

(1) The Secure 1000 SP is manufactured by Rapiscan Systems, Inc. in Torrance, CA and consists of two standard Secure 1000 systems placed facing each other. The screening process is initiated by pressing a button on the “master” unit. The second unit, which is electrically linked to the master unit, is referred to as the “slave” unit. When a screening is initiated, the front of the individual is screened by the master unit following which the back of the individual is screened by the slave unit.

(2) The x-ray tube in the Secure 1000 SP is operated at a fixed tube potential of 50 kilovolts-peak (kVp) with a minimum of 1 millimeter (mm) aluminum equivalent filtration. The purpose of the filtration is to remove the very low energy x-rays from the primary beam since these low energy x-rays would increase the dose to the skin and

eyes. Other parameters that affect the radiation dose, such as tube current and scan speed, are also fixed and cannot be adjusted by the system operators.

(3) In the Secure 1000 SP, the x-ray beam is collimated into a very small "pencil" beam. When a screening is performed, this small x-ray beam is swept rapidly across the individual as the entire x-ray tube is moved vertically. A set of large, very sensitive radiation detectors measure the intensity of the x-rays that are reflected back (or backscattered) from the surface of the individual and from any items they may be carrying. This information is processed to produce an image. Threats such as liquids, contraband, ceramics, explosives, narcotics, concealed currency and weapons, are readily detected.

(4) The entire scanning process takes approximately 6 seconds. Other processes such as image processing and preparation for the next screening require an additional 3-4 seconds. Therefore, the minimum time per screening is approximately 10 seconds. Due to the time needed to interpret the image and position the next person for screening, more than 10 second per screening is needed in actual security screening operations.

b. Overview of Applicable Standards.

(1) The primary radiation safety standard applicable to the Secure 1000 SP is American National Standards Institute/Health Physics Society (ANSI/HPS) N43.17-2009, *Radiation Safety for Personnel Security Screening Systems Using X-Ray or Gamma Radiation* (reference 1). This voluntary consensus standard defines two categories of personnel security screening systems – general-use and limited-use. The primary difference between the two categories is the dose to the individual being screened. The dose to the individual being screened is much lower for a general-use system than for a limited-use system. The Rapiscan Secure 1000 SP is categorized as a general-use system per ANSI/HPS N43.17-2009. This standard establishes a per screening dose limit for the individual being screened and also recommends annual radiation dose limits for both the individual being screened and the operators/bystanders who are around the system.

(2) Also applicable to the system operators are the Occupational Safety and Health Administration (OSHA) ionizing radiation safety limits as promulgated in Title 29, Code of Federal Regulations, Part 1910.1096 (29CFR1910.1096). This regulation specifies radiation dose limits for the whole body, lens of the eye (same as whole body) and skin for occupationally exposed individuals.

(3) Additionally, radiation safety recommendations for the general public from the National Council on Radiation Protection and Measurements (NCRP) Report No. 116, *Limitation of Exposure to Ionizing Radiation,* are also considered. Recommendations for dose limits to the whole body, lens of the eye and skin applicable to the general public are provided.

c. Radiation Quantities and Units.

(1) Several radiation quantities are used in this report.

(a) The radiation dose limits in NCRP Report No. 116 are expressed in the quantities *effective dose* or *equivalent doses* to specific organs or tissues. The effective dose is a radiation protection quantity that takes into account the radiation dose to individual organs within the body and the relative sensitivities of those organs. This report specifies effective dose limits for the whole body and equivalent dose limits for the lens of the eye, hands, feet and skin.

(b) Since the effective dose can be difficult to calculate, the ANSI/HPS N43.17-2009 uses a simplified version of effective dose called the *reference effective dose*. The reference effective dose is an approximation of effective dose that is much easier to calculate, but sufficiently accurate to ensure radiation safety.

(c) Regulatory dose limits in the U.S. are given in terms of Total Effective Dose Equivalent, which is similar to the effective dose.

(d) Another quantity used in radiation protection is *dose equivalent*. Measurements made with the dosimeters used for personnel monitoring are reported as dose equivalents. Dose equivalent does not consider the specific organ exposed and is therefore a more basic quantity. Three quantities are reported: deep dose equivalent (DDE), lens (of the eye) dose equivalent (LDE), and shallow dose equivalent (SDE).

(e) The DDE is the dose equivalent at a tissue depth of 1 centimeter (cm). The DDE is used as an estimate of the effective dose for regulatory compliance. If the entire body was uniformly exposed, the DDE and the effective dose would be numerically equal. In the exposure scenarios addressed in the report, deeper tissues receive smaller doses than shallow tissues. Since the organs at a tissue depth greater than 1 cm provided the largest contribution to the effective dose, the DDE would be expected to be somewhat higher than the effective dose. Therefore, this report will use DDE as an estimate of the effective dose.

(f) The LDE and SDE are the dose equivalents at a tissue depth of 0.3 cm and 0.007 cm, respectively. These two tissue depths are the average depths of the critical cells in the lens of the eye and the skin, respectively.

(2) Each of the above quantities can be expressed in either the traditional unit *rem*, or the international unit *sievert* (Sv). This can lead to confusion if the quantity is not explicitly stated (for example, if a measurement is given in rem, it could be an effective dose, a DDE, an LDE, or any of the other dose quantities discussed above).

(3) In addition, since the radiation doses discussed in this report are very small, the following submultiples will be used:

| | | |
|---|---|---|
| 0.001 rem | = | 1 millirem (mrem) |
| 0.000001 rem | = | 1 microrem (µrem) |
| 0.001 Sv | = | 1 millisievert (mSv) |
| 0.000001 Sv | = | 1 microsievert (µSv) |

(4) The conversion between traditional and international units is:

| | | |
|---|---|---|
| 100 rem | = | 1 Sv |
| 100 mrem | = | 1 mSv |
| 100 µrem | = | 1 µSv |

(5) In the appendices to this report, the dose quantity measured or calculated will be explicitly stated and reported in units of rem. In the body of this report, the generic term dose will be used and reported in units of rem followed by the international units of Sv in parentheses.

d. Summary of Previous Studies.

(1) Several studies were performed on the Secure 1000 SP prior to this dosimetry study (references 4, 5, and 6). Most of these studies included measurements made with portable radiation survey instruments in accordance with the methodology described in ANSI N43.17-2009 (reference 1) or the 2002 version of the standard. One study (reference 6) also included a Monte Carlo simulation which provided individual organ and tissue equivalent doses as well as the calculated effective dose. The results of the instrument measurements and Monte Carlo simulations were in good agreement.

(2) All of the previous studies indicated that potential effective dose to the individual being screened would be less than 5 µrem (0.05 µSv) per screening. Measurements of the potential effective doses to system operators were found to be on the order of 0.1 µrem (0.001 µSv) or less per screening.

(3) In addition, the Monte Carlo simulation indicated that dose equivalents to the lens of the eye and skin would not be significantly higher than the effective dose. Portable survey instruments are not capable of measuring eye and skin dose equivalents.

e. This report includes the dosimetry study that was performed at the TSA Systems Integration Facility (TSIF) in Arlington, VA, from 10 January 2011 through 25 January 2011 and consolidates a series of measurements performed between April 2010 and August 2011 at six airports where a total of 25 Secure 1000 SP systems were monitored.

6. METHODS.

a. General.

(1) This study was performed to validate the short-term measurements made with portable instruments and estimated eye and skin equivalent doses from computer modeling by making longer-term measurements using commercially available personnel dosimeters. Optically Stimulated Luminescence (OSL) dosimeters were used because they had the lowest minimum reporting limit (1 mrem) of available dosimeters and have the ability to measure DDE, LDE, and SDE.

(2) Based on the previous surveys, at least 200 screenings were needed to reach the 1 mrem reporting limit for dosimeters placed where the screened individual would stand. Similarly, at least 10,000 screenings were needed to reach a dose of 1 mrem on dosimeters placed around the system where operators/bystanders could be present. A target of 50,000 screenings was set for this study to increase the measurement accuracy.

(3) Two robots were built by the TSIF engineers – one to initiate a screening and a second to clear the image. Dosimeters were placed in, on and around the system to measure the DDE, LDE, and SDE to the individual being screened, the personnel just outside the inspection zone, and at the wings of the Secure 1000 SP. A total of 181 dosimeters were used for the study.

b. Doses to the individual being screened.

(1) Dosimeter Measurements. A water phantom (approximately 200 pounds) with a wooden rack was constructed in the inspection zone at the location where an individual would stand during a screening. Twenty-four, one-gallon Cubitainers© were

arranged on nine shelves in the approximate shape of a person. The water phantom setup inside the Secure 1000 SP is shown in Figure C.1, Appendix C. Nine dosimeters were placed on the front of the phantom facing the master unit of the Secure 1000 SP. A dosimeter was placed on the front of a Cubitainer© on each of the shelves. The distances of each dosimeter from the floor and the surface of the master unit are provided in Table 1. In Table 2, the blue squares represent the Cubitainers© and the dosimeter locations are annotated by the black dashes in the column labeled "Top View" and by the black hexagons in the column labeled "Front View." These diagrams are not to scale.

**Table 1.** Dosimeter locations relative to the floor and beam exit surface of the master unit.

| Shelf # | Physical Area | # of Cubitainers on shelf | Inches from floor | Centimeters from master unit |
|---|---|---|---|---|
| 9 | Head | 1 | 67 | 32 |
| 8 | Neck | 1 | 60 | 32 |
| 7 | Shoulders | 3 | 53 | 31 |
| 6 | Upper torso | 4 | 47 | 21 |
| 5 | Lower torso | 4 | 40 | 21 |
| 4 | Groin | 4 | 34 | 22 |
| 3 | Upper leg | 3 | 28 | 32 |
| 2 | Knee (left) | 2 | 22 | 30 |
| 1 | Shin (right) | 2 | 15 | 34 |

**Table 2.** Location of dosimeters on the water phantom.

| Shelf # | Physical Area | Top View | Front View |
|---|---|---|---|
| 9 | Head |  |  |
| 8 | Neck |  |  |
| 7 | Shoulders |  |  |
| 6 | Upper torso |  |  |
| 5 | Lower torso |  |  |
| 4 | Groin |  |  |
| 3 | Upper leg |  |  |
| 2 | Knee (left) |  |  |
| 1 | Shin (right) |  |  |

(2) Instrument Measurements. In addition to the dosimeters measurements, a survey was performed on the system and the reference effective dose was calculated using the methodology in ANSI/HPS N43.17-2009. This permits comparison of the dosimeter measurements with the typical survey methodology.

(3) The average DDE per screening will be used to estimate the number of screenings a single individual could receive each year.

c. Doses to System Operators/Bystanders.

(1) To calculate annual doses to an individual standing outside the inspection zone two pieces of data are needed – the average dose per screening and the number of screenings for which the individual is in that location over the course of a year.

(2) The doses just outside the inspection zone were measured by mounting dosimeters on two PVC frames. One frame was placed just outside the entrance side of the inspection zone and the other frame was placed just outside the exit side of the inspection zone. A total of 68 dosimeters were mounted on each frame at four different heights from the floor: 0.5 meter (m), 0.75 m, 1 m, and 1.5 m. Each row of dosimeters on a frame consisted of 3 dosimeters mounted parallel to the wing extending out from the master unit, 11 dosimeters mounted across the opening, and 3 dosimeters parallel to the wing extending out from the slave unit. The dosimeters were mounted approximately 10 cm apart. The PVC frames with dosimeters in place are shown in Figure D.1, Appendix D.

d. Doses Inside the Inspection Zone (TSIF study).

(1) During the study, eight dosimeters were placed on the outer edge of each of the four “wings” of the system as shown in Figure E.1, Appendix E. Pairs of dosimeters were placed at 0.5, 0.75, 1.0 and 1.5 m from the floor. For each pair of dosimeters, one was placed in a plastic bag and the other was not.

(2) During the study, a pair of dosimeters was mounted near the top center of each unit (master and slave) as shown in Figure E.2, Appendix E. For each pair of dosimeters, one was placed in a plastic bag and the other was not.

(3) These measurements have two purposes. First, to determine if placing the dosimeters in plastic bags has a significant impact on the dosimeters’ results. Second, to determine if the doses from the TSIF Secure 1000 SP are similar to data collected from other Secure 1000 SP systems in use at airports.

e. Doses Inside the Inspection Zone (Six Airports).

(1) Dosimeters were also mounted on several Secure 1000 SP systems at six different airports across the U.S. Typically, six dosimeters were mounted on each system – one on each of the wings at a height of 1 m from the floor and one at the top center of each of the two units (master and slave). Each dosimeter was placed in a plastic bag and then attached to the system with tape and a custody seal. Care was taken to ensure that the tape and custody seals did not cover any portion of the dosimeter.

(2) Ideally, the dosimeters would have been positioned just outside the inspection zone near the edge of the wings and just above the top of each of the units (master and slave). However, there is typically not a permanent structure in these

areas on which to mount the dosimeters. Therefore, they were placed on the wings as close to the edge of the inspection zone as possible. The measurements made on the TSIF system will be compared to these measurements on a per screening basis.

7. RESULTS AND DISCUSSION.

a. General.

(1) The robotic systems worked well and 93,105 screenings were completed between 10 January 2011 and 25 January 2011. On 25 January 2011, the dosimeters were removed and returned to the dosimetry provider for processing.

(2) During the dosimetry data evaluation, inconsistencies were identified. These inconsistencies included doses reported as being due to beta particle exposures and apparent disparities between the reported radiation quality[1] and the reported DDE, LDE, and SDE. For example, dosimeter no. 1556 (Nov) reported a medium photon quality with a DDE below the minimum reporting level (M), LDE of 29 mrem, and SDE of 69 mrem. In general, with a medium energy photon a large difference between DDE and SDE would not be expected. Technical discussions with the dosimetry provider determined that the default algorithm applied to the raw dosimeter data, when there is no specific knowledge about the radiation field, was including a beta particle component in the dose calculations. Therefore, the dosimeter provider was requested to re-evaluate the raw dosimeter data as "x-ray only" without the beta particle component of the algorithm.

(3) Both the original and re-evaluated doses are provided in this report. Typically, the re-evaluated data show an increase in the DDE and a decrease in the LDE and SDE. The actual x-ray fields are between the assumed radiation field of the default algorithm and that assumed by the x-ray only algorithm. Therefore, these two data sets bound the potential doses.

(4) Several appendices containing the details of the dosimeter results and the analysis of those results are included in this report. These appendices are as follows:

(a) Appendix C contains the results and analysis of the dosimeters placed on the water phantom. These results relate to the potential radiation doses to the screened individual.

[1] The radiation quality is a qualitative indicator of the suspected radiation types and energies. See Appendix G for more details.

(b) Appendix D contains the results and analysis of the dosimeters placed on the PVC frames around the Secure 1000 SP at the TSIF. These results relate to the potential radiation doses to system operators and bystanders.

(c) Appendix E contains the results and analysis of the dosimeters placed on the "wings" and tops of each unit of the Secure 1000 SP at the TSIF. These results will be used in the analysis of the measurement data from the six airports where dosimeters were mounted.

(d) Appendix F contains the results and analysis of the dosimeters placed on the "wings" and tops of each unit for the systems monitored at the six airports.

(e) Appendix G contains copies of the dosimetry reports provided by Landauer®, Inc.

b. Potential Doses to Screened Individuals.

(1) As shown in Table C.2 in Appendix C, the mean DDE per screening is between 3.8 and 4.9 µrem. The measured reference effective dose using the ANSI/HPS N43.17-2009 methodology for this system was 3.3 µrem, which is slightly lower than the DDE, as expected. These doses are consistent with previously reported values and are well below the dose per screening limit of 25 µrem specified in ANSI/HPS N43.17-2009.

(2) Using the mean DDEs listed above as an estimate of the effective dose, an individual could receive between 5,087 and 6,540 screenings every year without exceeding the annual screening dose limit of 25 mrem specified in ANSI/HPS N43.17-2009. This equates to approximately 14-18 screenings per day, every day of the year. It is extremely unlikely that any individual would be screened this many times in a year.

(3) Also shown in Table C.2 in Appendix C, are the mean LDE and SDE per screening. The mean LDE is between 5.8 and 6.7 µrem per screening and the mean SDE is between 6.2 and 11.3 µrem per screening.

(4) The recommended general public dose limits for the lens of the eye and the skin specified in NCRP Report No. 116 are 1,500 and 5,000 mrem per year, respectively. Based on the mean LDEs and SDEs measured, an individual could receive between 224,329 and 260,771 screenings every year without exceeding the recommended general public LDE and between 441,163 and 809,765 screenings every

year without exceeding the recommended general public SDE. Therefore, if the number of screenings an individual receives in a year is limited based on the DDE (or effective dose), the general public dose limits for the lens of the eye and the skin will never be exceeded.

c. Potential Doses to System Operators and Bystanders.

(1) As shown in Tables D.3, D.4, and D.5 in Appendix D, the theoretical maximum DDE that could be received around the Secure 1000 SP is between 85 mrem (based on the originally reported data) and 108 mrem (based on the re-evaluated data). These estimates assume the system is used at its theoretical maximum through-put and that the highest DDE measured in the study is present at all locations around the system. These values are well below the OSHA occupational dose limit of 1,250 mrem per quarter (or 5,000 mrem per year) and approximately equal to TSA's administrative goal of less than 100 mrem per year. In actual use, it would be impossible to operate the system at its theoretical maximum through-put since time is needed to position the passenger and analyze the image before screening the next person. In addition, the majority of the doses measured are much less than the maximum. A more realistic upper bound on the potential DDE to system operators at a busy airport is 3 mrem per year. This estimate still assumes that a single operator is assigned to the Secure 1000 SP system for the entire day, every day of their work year and is standing at the very edge of the inspection zone.

(2) A similar analysis for LDE and SDE indicates the theoretical annual maximum LDE and SDE are 224 mrem and 534 mrem, respectively. More realistic annual upper bounds are 8 mrem for the LDE and 15 mrem for the SDE. Both of these values are well below the annual public dose limits of 1,500 mrem for LDE and 5,000 mrem for SDE as recommended in NCRP Report No. 116.

d. Doses Inside the Inspection Zone (TSIF Study).

(1) The measured DDEs at the master unit exit side and the slave unit entrance side were found to be significantly lower than at the other two "wings." This is most likely due to a slight misalignment of the two units. A slight misalignment of this type is not a radiation safety issue and is fairly common. However, if the misalignment becomes large, the primary x-ray beam would not be completely intercepted by the wings and could result in slightly elevated radiation levels outside the inspection zone. Physical misalignments large enough to cause elevated levels outside the inspection zone can be easily seen by simply looking along the edges of the two units. Physical

misalignments will also be readily detected with appropriate instruments during a radiation survey of the system.

(2) A comparison of radiation doses measured by dosimeters placed inside plastic bags with the doses measured by dosimeters that were not in plastic bags showed that the presence of the plastic bag had little or no effect on the measurement.

(3) The radiation doses measured just inside the inspection zone (at the edge of the system “wings”) does not represent a dose to any person. No person will be at these locations during screening. As discussed in paragraph 6 above, the dosimeters were placed at these locations during the measurements at the individual airports since there is typically not a permanent structure just outside the inspection zone on which to mount dosimeters. If the DDE, LDE, and SDE measurements at the system “wings” at the airports (on a per screening basis) are similar or lower than the maximum values from the TSIF system, then the radiation dose estimates for the system operators given in paragraph c above are also reasonable estimates for the airports.

e. Doses Inside the Inspection Zone (Six Airports). To compare the measurements at the six airports to the measurements at the TSIF, the ratio of each measured radiation dose (DDE, LDE, and SDE) to the maximum corresponding value from the TSIF was calculated. Most of the ratios are less than one, indicating the doses at the six monitored locations inside the inspection zone are generally lower at the airports than for the system at the TSIF. In no case was the airport measurement significantly larger. Therefore, the radiation doses from the measurements around the system at the TSIF are a good estimate of the doses likely at the airports.

8. CONCLUSIONS.

a. The Secure 1000 SP meets the radiation dose per screening limit of 25 µrem for general-use systems as specified in ANSI/HPS N43.17-2009. Members of the traveling public and airport/airline employees who are required to be screened can be screened approximately 5,000 times per year without exceeding the annual dose limit of 25 mrem specified in ANSI/HPS N43.17-2009 (this limit is set at one-quarter of the recommended annual public dose limit).

b. The potential doses to system operators and bystanders are well below the occupational dose limits and also well below TSA’s administrative goal of 100 mrem in a year (this administrative goal is set at the recommended annual dose limit for the general public).

c. Personal monitoring is not required around the Secure 1000 SP. Personal monitoring is required under OSHA regulation for any individual likely to receive a dose in excess of 25 percent of the quarterly dose limit (or 312.5 mrem per quarter which equals 1,250 mrem per year). Even under maximum exposure scenarios, individuals working around the Secure 1000 SP could not receive a dose that approaches a regulatory limit that would require monitoring.

9. RECOMMENDATIONS.

a. The systems should be operated in accordance with the requirements of ANSI/HPS N43.17-2009. This includes annual surveys that ensure the system is in compliance with the radiation dose limits of the standard. These surveys should ensure the:

(1) Proper alignment of the master and slave units (i.e., that the x-ray beam does not extend beyond the “wings” at each corner of the inspection zone).

(2) Presence of 1 mm or more aluminum equivalent filtration.

b. Only the individual being screened should be inside the inspection zone (delineated by the yellow border) during screening. However, the operator may reach into the inspection zone to assist an individual, in the event of an emergency. In any event, an operator’s entry into the inspection zone, when a scan is in progress, should be minimized.

c. A single individual should not be screened more than 5,000 times in a year.

(1) It is extremely unlikely that a member of the traveling public would be screened this many times. Even a frequent flier who flies daily would not be expected to be screened more than 5,000 times in a year.

(2) If airport/airline employees are required to be screened under airport security guidelines and could approach 5,000 screenings in a year, then a more formal evaluation of the number of times they are screened would be necessary.

d. If area monitoring is performed around additional Secure 1000 SP systems, the dosimeters should be mounted on the system “wings” as close to the outside edge as possible and 1 m from the floor. The dosimeters may be placed in small plastic bags without significantly affecting the measurements.

(1) The dosimetry provider should be provided with as much information about the radiation field as possible to allow proper assessment of the radiation dose. At a minimum, the dosimetry provider should be informed that the radiation field contains only x-rays. Additional information on the x-ray energy and system filtration is also useful.

(2) The measurements from such area monitoring should be normalized on a per screening basis and compared to the maximum values in Table E.12, Appendix E of this report. Values higher than those reported in Appendix E do not necessarily indicate a radiation hazard. However, further investigation should be conducted to determine the cause of any such future elevated measurements.

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Health Physicist
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APPROVED:

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Program Manager
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# APPENDIX A
# REFERENCES

1. American National Standards Institute/Health Physics Society (ANSI/HPS) N43.17-2009, *Radiation Safety for Personnel Security Screening Systems Using X-Ray or Gamma Radiation,* August 2009.

2. Title 29, Code of Federal Regulations, Part 1910.1096 (29CFR1910.1096)

3. National Council on Radiation Protection and Measurements (NCRP) Report No. 116, *Limitation of Exposure to Ionizing Radiation*

4. Johns Hopkins University Applied Physics Laboratory, *Radiation Safety Engineering Assessment Report for the Rapiscan Secure 1000 in Single Pose Configuration*, October 2009, (Version 1), Available at http://www.tsa.gov/assets/pdf/jh_apl_v1.pdf (accessed 27 September 2011).

5. Johns Hopkins University Applied Physics Laboratory, *Radiation Safety Engineering Assessment Report for the Rapiscan Secure 1000 in Single Pose Configuration*, August 2010, (Version 2), Available at http://www.tsa.gov/assets/pdf/jh_apl_v2.pdf (accessed 27 September 2011).

6. Assessment of the Rapiscan Secure 1000 Body Scanner for Conformance with Radiological Safety Standards, 21 July 2006, Available at http://www.tsa.gov/assets/pdf/rapiscan_secure_1000.pdf (accessed 27 September 2011).

7. Specification Sheet - Luxel®+ Dosimeter for X, Gamma, Beta, and Neutron Radiation, Landauer®, 2005, Available at: http://www.landauer.com/uploadedFiles/Healthcare_and_Education/Products/Dosimeters/LuxelSpecifications.en-US.pdf (accessed 22 September 2011).

# APPENDIX B
# ABBREVIATIONS

| | |
|---|---|
| ANSI | American National Standards Institute |
| CFR | Code of Federal Regulations |
| cm | centimeter |
| DCF | Dose Conversion Factor |
| DDE | Deep Dose Equivalent |
| HPS | Health Physics Society |
| kVp | kilovolts-peak |
| LDE | Lens (of the eye) Dose Equivalent |
| m | meter |
| µR | microroentgen |
| µrem | microrem |
| µSv | microsievert |
| mm | millimeter |
| mrem | millirem |
| mSv | millisievert |
| NCRP | National Council on Radiation Protection and Measurements |
| OSHA | Occupational Safety and Health Administration |
| OSL | Optically Stimulated Luminescence |
| PVC | Polyvinyl Chloride |
| REF | reference effective dose |
| SDE | Shallow Dose Equivalent |
| SP | Single Pose |
| Sv | sievert |
| TSA | Transportation Security Administration |
| TSIF | TSA Systems Integration Facility |

# APPENDIX C
# DOSE TO INDIVIDUAL BEING SCREENED - RESULTS

## 1. DOSIMETER MEASUREMENTS.

a. The doses measured on the nine dosimeters positioned on the water phantom after the 93,105 screenings and basic statistics (minimum, mean and standard deviation, maximum, and range) are presented in Table C.1. The results (DDE, LDE, and SDE) for all nine dosimeters on the phantom have been used to calculate the statistics presented in Table C.1 because the radiation field, 30 cm from the beam exit surface, is expected to be uniform regardless of the height from the floor. Figure C.1 shows the actual water phantom set up inside the Secure 1000 SP. Figure C.2 contains color-coded posting plots showing the location and relative intensities of the dosimeters' measurements for both the original data obtained using the default algorithm and the re-evaluated data obtained when processed as "x-ray only" exposures.

b. For purposes of demonstrating compliance with the radiation dose limits in ANSI/HPS N43.17-2009, the measurements need to be made at a distance of 30 cm from the beam exit surface. Three of the dosimeters (Participant Nos. 1514-1516 were located 21-22 cm and would be expected to overestimate the actual dose.

**Table C.1.** Dose on dosimeter after 93,105 screenings (in millirem)

| | | Evaluated Using Default Algorithm | | | Re-evaluated as "X-Ray Only" | | |
|---|---|---|---|---|---|---|---|
| Participant # (Monitoring Period) | Distance from Master Unit (cm) | DDE | LDE | SDE | DDE | LDE | SDE |
| 1511 (Dec) | 32 | 302 | 479 | 818 | 385 | 458 | 497 |
| 1512 (Dec) | 32 | 396 | 472 | 742 | 438 | 510 | 545 |
| 1513 (Dec) | 31 | 399 | 511 | 822 | 447 | 516 | 549 |
| 1514 (Dec) | 21 | 420 | 759 | 1243 | 598 | 707 | 765 |
| 1515 (Dec) | 21 | 384 | 845 | 1505 | 598 | 715 | 778 |
| 1516 (Dec) | 22 | 344 | 790 | 1443 | 539 | 641 | 696 |
| 1517 (Dec) | 32 | 393 | 522 | 800 | 457 | 522 | 551 |
| 1518 (Dec) | 30 | 309 | 754 | 1289 | 317 | 362 | 382 |
| 1519 (Dec) | 34 | 256 | 471 | 835 | 339 | 389 | 411 |
| | | | | | | | |
| Minimum | | 256 | 471 | 742 | 317 | 362 | 382 |
| Mean | | 356 | 623 | 1055 | 458 | 536 | 575 |
| Std. Dev. | | 56 | 159 | 309 | 103 | 128 | 143 |
| Maximum | | 420 | 845 | 1505 | 598 | 715 | 778 |
| Range | | 164 | 374 | 763 | 281 | 353 | 396 |


**Figure C.1.** Water phantom positioned inside the Secure 1000 SP.

Doses (Default Algorithm)

| Description | DDE (mrem) | LDE (mrem) | SDE (mrem) |
|---|---|---|---|
| Head | 302 | 479 | 818 |
| Neck | 396 | 472 | 742 |
| Shoulder | 399 | 511 | 822 |
| Upper Torso | 420 | 759 | 1243 |
| Lower Torso | 384 | 845 | 1505 |
| Groin | 344 | 790 | 1443 |
| Upper Leg | 393 | 522 | 800 |
| Left Knee | 309 | 754 | 1289 |
| Right Shin | 256 | 471 | 835 |

Doses ("X-Ray Only" Algorithm)

| Description | DDE (mrem) | LDE (mrem) | SDE (mrem) |
|---|---|---|---|
| Head | 385 | 458 | 497 |
| Neck | 438 | 510 | 545 |
| Shoulder | 447 | 516 | 549 |
| Upper Torso | 598 | 707 | 765 |
| Lower Torso | 598 | 715 | 778 |
| Groin | 539 | 641 | 696 |
| Upper Leg | 457 | 522 | 551 |
| Left Knee | 317 | 362 | 382 |
| Right Shin | 339 | 389 | 411 |

**Figure C.2.** Posting plots of the dosimeters data along the surface of the water phantom.

c. In the posting plots shown in Figure C.2 above, the differences in the doses obtained using the default algorithm and those obtained using the more appropriate "x-ray only" algorithm can be clearly seen. In the reprocessed data, the highest doses are near the middle of the water phantom where the dosimeters were slightly closer to the x-ray source.

2. DATA ANALYSIS.

a. Basic statistics on a per screening basis are presented in Table C.2. These are simply the values from Table C.1 divided by 93,105, then multiplied by 1000 (to convert millirem to microrem) and rounded to the nearest tenth of a microrem.

**Table C.2.** Dose per screening (microrem)

| | Evaluated Using Default Algorithm | | | Re-evaluated as "X-Ray Only" | | |
|---|---|---|---|---|---|---|
| | DDE | LDE | SDE | DDE | LDE | SDE |
| Minimum | 2.7 | 5.1 | 8.0 | 3.4 | 3.9 | 4.1 |
| Mean | **3.8** | **6.7** | **11.3** | **4.9** | **5.8** | **6.2** |
| Std. Dev. | 0.6 | 1.7 | 3.3 | 1.1 | 1.4 | 1.5 |
| Maximum | 4.5 | 9.1 | 16.2 | 6.4 | 7.7 | 8.4 |
| Range | 1.8 | 4.0 | 8.2 | 3.0 | 3.8 | 4.3 |

b. The number of annual, weekly or daily screenings required for an individual to reach a DDE of 25 mrem, an LDE of 1,500 mrem, and an SDE of 5,000 mrem based on the maximum, mean and minimum dosimeter values are provided in Table C.3, Table C.4, and Table C.5.

**Table C.3.** Screenings to Reach a DDE of 25 mrem.

| | Evaluated Using Default Algorithm | | | Re-evaluated as "X-Ray Only" | | |
|---|---|---|---|---|---|---|
| | Annual | Weekly | Daily | Annual | Weekly | Daily |
| Maximum DDE | 5,542 | 107 | 15 | 3,892 | 75 | 11 |
| Mean DDE | 6,540 | 126 | 18 | 5,087 | 98 | 14 |
| Minimum DDE | 9,092 | 175 | 25 | 7,343 | 141 | 20 |

**Table C.4.** Screenings to Reach a LDE of 1,500 mrem.

| | Evaluated Using Default Algorithm | | | Re-evaluated as "X-Ray Only" | | |
|---|---|---|---|---|---|---|
| | Annual | Weekly | Daily | Annual | Weekly | Daily |
| Maximum LDE | 165,275 | 3,178 | 454 | 195,325 | 3,756 | 537 |
| Mean LDE | 224,329 | 4,314 | 616 | 260,771 | 5,015 | 716 |
| Minimum LDE | 296,513 | 5,702 | 815 | 385,794 | 7,419 | 1,060 |

**Table C.5.** Screenings to Reach a SDE of 5,000 mrem.

| | Evaluated Using Default Algorithm | | | Re-evaluated as "X-Ray Only" | | |
|---|---|---|---|---|---|---|
| | Annual | Weekly | Daily | Annual | Weekly | Daily |
| Maximum SDE | 309,319 | 5,948 | 850 | 598,361 | 11,507 | 1,644 |
| Mean SDE | 441,163 | 8,484 | 1,212 | 809,765 | 15,572 | 2,225 |
| Minimum SDE | 627,392 | 12,065 | 1,724 | 1,218,652 | 23,436 | 3,348 |

3. ION CHAMBER MEASUREMENTS.

a. In addition to the dosimeter measurements, the dose to the screened individual was also calculated from the survey data using the methodology described in ANSI/HPS N43.17-2009. The ANSI/HPS N43.17-2009 methodology assumes the front and back of the screened individual are in the same radiation field; however, this is not the case with the Rapiscan Secure 1000 SP. Therefore, an adjustment in the calculation (a factor of 2) was made for the unequal contributions to exposure from the master and slave units. The dose conversion factor was determined from the maximum half-value layer measurement and an energy correction factor of 1.25 was used for the ionization chamber. The energy correction factor is necessary to account for the chamber's under-response to 50 kVp x-rays. This data is provided in Table C.6. The ionization chamber measurements are presented in Table C.7. The reference effective (REF) dose calculated from this method was 3.3 µrem per screening (REF = 7.29 * 1.25 * 0.11 * 1.646 * 2, Reference 1, equation. 1a with adjustment factor of 2 for unequal exposure contribution).

b. These measurements were made with a Radcal Model 9010 paired with a Radcal Model 10X5-1800 ionization chamber.

**Table C.6.** Half-Value Layer Measurements.

| Filter Thickness (mm Al) | Master Unit (µR) | Slave Unit (µR) |
|---|---|---|
| 0 | 0.945 | 0.910 |
| 1 | 0.555 | 0.555 |
| 1.5 | 0.490 | 0.390 |
| | | |
| HVL (mm Al) | 1.6460 | 1.2815 |
| DCF | 0.181 | * |

* DCF based on maximum HVL.

**Table C.7.** Ionization Chamber Measurements.

| Measurement No. | Master Unit (µR) | Slave Unit (µR) |
|---|---|---|
| 1 | 7.43 | 6.38 |
| 2 | 7.24 | 6.32 |
| 3 | 7.18 | 6.26 |
| 4 | 7.32 | 6.26 |
| 5 | 7.26 | 6.39 |
| | | |
| Mean | 7.29 | 6.32 |

# APPENDIX D
# DOSE TO OPERATORS/BYSTANDERS - RESULTS

1. DOSIMETER MEASUREMENTS. The radiation doses measured on the 136 dosimeters positioned at the boundary of the inspection zone after the 93,105 screenings and basic statistics (maximum, "average", "minimum", and number of "M"s) are presented in Table D.1. Dose equivalents below the minimum reporting level (1 mrem) are reported as "M." The "average" was calculated assuming an "M" equals 1 mrem. The "minimum" was calculated assuming an "M" equals 0 mrem. Figure D.1 shows the dosimeter set up at the entrance and exit sides of the system. Figures D.2, D.3, and D.4 are color-coded posting plots showing the location and relative intensities of the dosimeter measurements that were greater than the minimum reporting level.

**Table D.1.** Radiation dose recorded by the dosimeters after 93,105 screenings (in mrem)

| | | Evaluated Using Default Algorithm | | | Re-evaluated Using "X-Ray Only" Algorithm | | |
|---|---|---|---|---|---|---|---|
| Participant No. (Monitoring Period) | Location/Height | DDE | LDE | SDE | DDE | LDE | SDE |
| 1556 (Dec) | Exit Side Master Wing 1.5 m | M | M | M | M | M | M |
| 1557 (Dec) | | M | M | M | M | M | M |
| 1558 (Dec) | | M | M | M | M | M | M |
| 1559 (Dec) | | M | 1 | 3 | M | M | M |
| 1560 (Dec) | | M | 2 | 5 | M | M | M |
| 1561 (Dec) | | M | 7 | 15 | M | M | M |
| 1562 (Dec) | | M | 4 | 4 | M | M | M |
| 1563 (Dec) | | M | 3 | 6 | M | M | M |
| 1564 (Dec) | | M | 2 | 4 | M | M | M |
| 1565 (Dec) | | M | 3 | 5 | M | M | M |
| 1566 (Dec) | | M | 2 | 4 | M | M | M |
| 1567 (Dec) | | M | 7 | 15 | M | M | M |
| 1568 (Dec) | | M | 6 | 13 | M | M | M |
| 1569 (Dec) | | M | M | M | M | M | M |
| 1570 (Dec) | | M | M | M | M | M | M |
| 1571 (Dec) | | 11 | 11 | 9 | 2 | 2 | 2 |
| 1572 (Dec) | Exit Side Slave Wing 1.5 m | M | M | M | M | M | M |
| 1573 (Dec) | Exit Side Master Wing 1.0 m | M | M | M | M | M | M |
| 1574 (Dec) | | M | M | M | M | M | M |
| 1575 (Dec) | | M | M | M | M | M | M |
| 1576 (Dec) | | M | 2 | 4 | M | M | M |
| 1577 (Dec) | | M | 1 | 2 | M | M | M |
| 1578 (Dec) | | M | 4 | 7 | M | M | M |

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| | | Evaluated Using Default Algorithm | | | Re-evaluated Using "X-Ray Only" Algorithm | | |
|---|---|---|---|---|---|---|---|
| Participant No. (Monitoring Period) | Location/Height | DDE | LDE | SDE | DDE | LDE | SDE |
| 1579 (Dec) | | M | 4 | 7 | M | M | M |
| 1580 (Dec) | | M | 3 | 5 | M | M | M |
| 1581 (Dec) | | M | 2 | 4 | M | M | M |
| 1582 (Dec) | | M | 2 | 3 | M | M | M |
| 1583 (Dec) | | M | 3 | 5 | M | M | M |
| 1584 (Dec) | | M | 7 | 14 | M | M | M |
| 1585 (Dec) | | M | 2 | 4 | M | M | M |
| 1586 (Dec) | | M | 2 | 5 | M | M | M |
| 1587 (Dec) | | M | 1 | 3 | M | M | M |
| 1588 (Dec) | | M | M | M | M | M | M |
| 1589 (Dec) | Exit Side Slave Wing 1.0 m | M | M | M | M | M | M |
| 1590 (Dec) | Exit Side Master Wing 0.75 m | M | M | M | M | M | M |
| 1591 (Dec) | | 1 | 1 | 1 | M | M | M |
| 1592 (Dec) | | M | M | M | M | M | M |
| 1593 (Dec) | | M | 3 | 5 | M | M | M |
| 1594 (Dec) | | M | 1 | 2 | M | M | M |
| 1595 (Dec) | | M | 3 | 5 | M | M | M |
| 1596 (Dec) | | M | 2 | 3 | M | M | M |
| 1597 (Dec) | | M | 4 | 7 | M | M | M |
| 1598 (Dec) | | M | 8 | 16 | M | M | M |
| 1599 (Dec) | | M | 2 | 3 | M | M | M |
| 1600 (Dec) | | M | 6 | 13 | M | M | M |
| 1601 (Dec) | | M | 8 | 16 | M | M | M |
| 1602 (Dec) | | M | 2 | 5 | M | M | M |
| 1603 (Dec) | | M | 1 | 3 | M | M | M |
| 1604 (Dec) | | M | 1 | 3 | M | M | M |
| 1605 (Dec) | | M | M | M | M | M | M |
| 1606 (Dec) | Exit Side Slave Wing 0.75 m | M | M | M | M | M | M |
| 1607 (Dec) | Exit Side Master Wing 0.5 m | M | M | M | M | M | M |
| 1608 (Dec) | | M | M | M | M | M | M |
| 1609 (Dec) | | M | M | M | M | M | M |
| 1610 (Dec) | | M | 2 | 5 | M | M | M |
| 1511 (Nov) | | M | 2 | 4 | M | M | M |
| 1512 (Nov) | | M | 3 | 7 | M | M | M |
| 1513 (Nov) | | M | 4 | 9 | 1 | M | M |
| 1514 (Nov) | | M | 3 | 6 | M | M | M |
| 1515 (Nov) | | M | 4 | 8 | M | M | M |
| 1516 (Nov) | | M | 5 | 8 | 1 | M | M |
| 1517 (Nov) | | M | 4 | 8 | 1 | M | M |
| 1518 (Nov) | | M | 4 | 7 | 1 | M | M |
| 1519 (Nov) | | M | 2 | 3 | 2 | 1 | 1 |
| 1520 (Nov) | | M | 1 | 3 | M | M | M |
| 1521 (Nov) | | M | 2 | 5 | M | M | M |
| 1522 (Nov) | | 1 | 1 | 3 | M | M | M |

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| | | Evaluated Using Default Algorithm | | | Re-evaluated Using "X-Ray Only" Algorithm | | |
|---|---|---|---|---|---|---|---|
| Participant No. (Monitoring Period) | Location/Height | DDE | LDE | SDE | DDE | LDE | SDE |
| 1523 (Nov) | Exit Side Slave Wing 0.5 m | M | M | M | M | M | M |
| 1524 (Nov) | Entrance Side Slave Wing 1.5 m | M | M | M | M | M | M |
| 1525 (Nov) | | 1 | 1 | 3 | M | M | M |
| 1526 (Nov) | | M | 2 | 5 | M | M | M |
| 1527 (Nov) | | M | 10 | 20 | 1 | M | M |
| 1528 (Nov) | | M | 4 | 8 | 1 | M | M |
| 1529 (Nov) | | M | 6 | 10 | 2 | 2 | 2 |
| 1530 (Nov) | | M | 2 | 6 | M | M | M |
| 1531 (Nov) | | M | 9 | 19 | M | M | M |
| 1532 (Nov) | | M | 1 | 3 | M | M | M |
| 1533 (Nov) | | M | 5 | 9 | 1 | M | M |
| 1534 (Nov) | | M | 6 | 12 | M | M | M |
| 1535 (Nov) | | M | 5 | 9 | 1 | M | M |
| 1536 (Nov) | | M | 3 | 6 | 1 | M | M |
| 1537 (Nov) | | M | 2 | 6 | M | M | M |
| 1538 (Nov) | | M | M | 1 | M | M | M |
| 1539 (Nov) | | M | M | M | 14 | 14 | 14 |
| 1540 (Nov) | Entrance Side Master Wing 1.5 m | M | M | M | M | M | M |
| 1541 (Nov) | Entrance Side Slave Wing 1.0 m | M | M | M | M | M | M |
| 1542 (Nov) | | M | M | M | M | M | M |
| 1543 (Nov) | | M | 1 | 4 | M | M | M |
| 1544 (Nov) | | M | 1 | 5 | M | M | M |
| 1545 (Nov) | | M | 4 | 9 | M | M | M |
| 1546 (Nov) | | M | 3 | 6 | M | M | M |
| 1547 (Nov) | | M | 3 | 6 | M | M | M |
| 1548 (Nov) | | M | 3 | 7 | M | M | M |
| 1549 (Nov) | | M | 4 | 7 | M | M | M |
| 1550 (Nov) | | M | 3 | 7 | M | M | M |
| 1551 (Nov) | | M | 4 | 9 | M | M | M |
| 1552 (Nov) | | M | 2 | 5 | M | M | M |
| 1553 (Nov) | | M | 1 | 4 | M | M | M |
| 1554 (Nov) | | M | 1 | 4 | M | M | M |
| 1555 (Nov) | | M | M | 1 | M | M | M |
| 1556 (Nov) | | M | 29 | 69 | M | M | M |
| 1557 (Nov) | Entrance Side Master Wing 1.0 m | M | M | M | M | M | M |
| 1558 (Nov) | Entrance Side Slave Wing 0.75 m | M | M | M | M | M | M |
| 1559 (Nov) | | M | M | 3 | M | M | M |
| 1560 (Nov) | | M | M | 2 | M | M | M |
| 1561 (Nov) | | M | 1 | 4 | M | M | M |
| 1562 (Nov) | | M | 2 | 4 | M | M | M |
| 1563 (Nov) | | M | 3 | 8 | M | M | M |
| 1564 (Nov) | | M | 3 | 6 | M | M | M |
| 1565 (Nov) | | M | 3 | 6 | 1 | M | M |
| 1566 (Nov) | | M | 20 | 40 | 2 | 2 | 2 |

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| | | Evaluated Using Default Algorithm | | | Re-evaluated Using "X-Ray Only" Algorithm | | |
|---|---|---|---|---|---|---|---|
| Participant No. (Monitoring Period) | Location/Height | DDE | LDE | SDE | DDE | LDE | SDE |
| 1567 (Nov) | | M | 4 | 8 | M | M | M |
| 1568 (Nov) | | M | 4 | 10 | M | M | M |
| 1569 (Nov) | | M | 4 | 8 | 1 | M | M |
| 1570 (Nov) | | M | 4 | 8 | 1 | M | M |
| 1571 (Nov) | | M | 1 | 4 | M | M | M |
| 1572 (Nov) | | M | M | 1 | M | M | M |
| 1573 (Nov) | | M | M | M | M | M | M |
| 1574 (Nov) | Entrance Side Master Wing 0.75 m | M | M | M | M | M | M |
| 1575 (Nov) | Entrance Side Slave Wing 0.5 m | M | M | M | M | M | M |
| 1576 (Nov) | | M | M | M | M | M | M |
| 1577 (Nov) | | M | 1 | 3 | M | M | M |
| 1578 (Nov) | | M | M | 2 | M | M | M |
| 1579 (Nov) | | M | 2 | 4 | 1 | M | M |
| 1580 (Nov) | | M | 2 | 5 | M | M | M |
| 1581 (Nov) | | M | 3 | 7 | M | M | M |
| 1582 (Nov) | | M | 3 | 7 | M | M | M |
| 1583 (Nov) | | M | 1 | 4 | M | M | M |
| 1584 (Nov) | | M | M | 1 | M | M | M |
| 1585 (Nov) | | M | 3 | 6 | M | M | M |
| 1586 (Nov) | | M | 3 | 7 | M | M | M |
| 1587 (Nov) | | M | 3 | 6 | M | M | M |
| 1588 (Nov) | | M | 2 | 5 | M | M | M |
| 1590 (Nov) | | M | M | M | M | M | M |
| 1591 (Nov) | | M | M | M | M | M | M |
| 1592 (Nov) | Entrance Side Master Wing 0.5 m | M | M | M | M | M | M |
| | | | | | | | |
| Max | | 11 | 29 | 69 | 14 | 14 | 14 |
| "Avg" | | 1.07 | 2.85 | 5.63 | 1.13 | 1.12 | 1.12 |
| "Min" | | 0.103 | 2.55 | 5.39 | 0.257 | 0.15 | 0.15 |
| # of "M"s | | 132 | 40 | 33 | 118 | 131 | 131 |

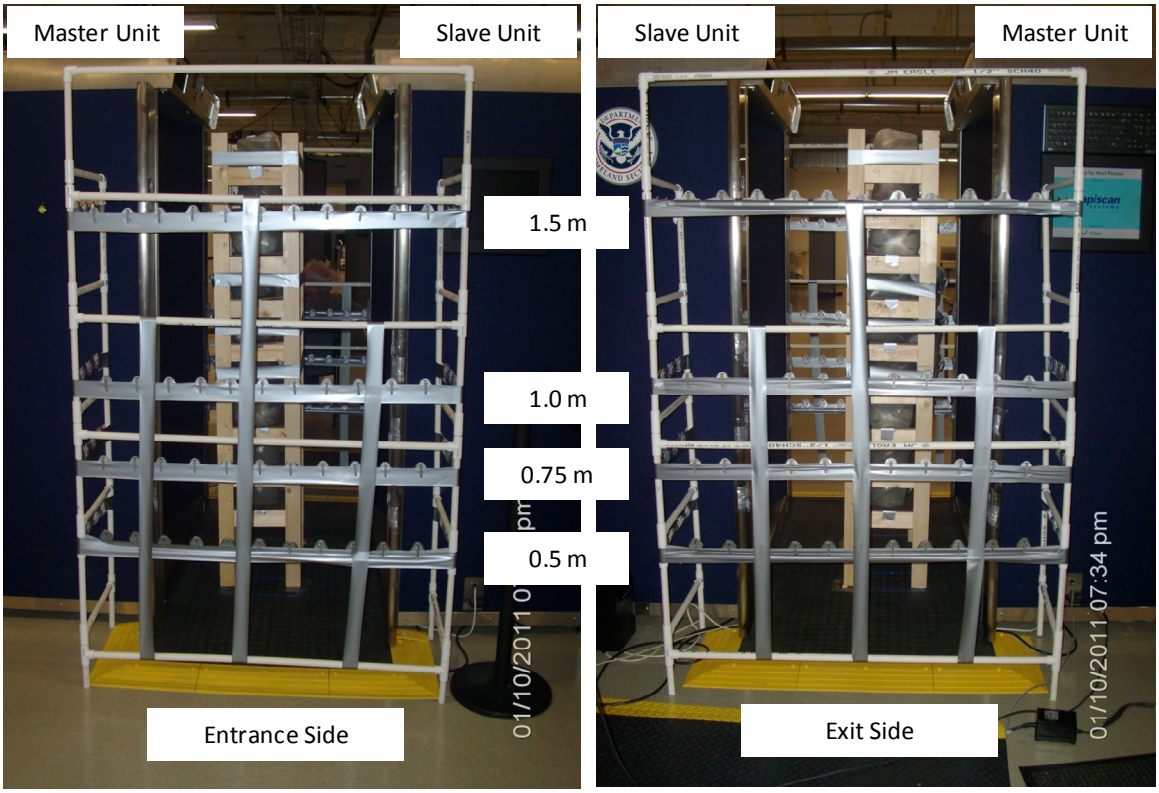


**Figure D.1.** Entrance and Exit Side Dosimeters on PVC Frames.

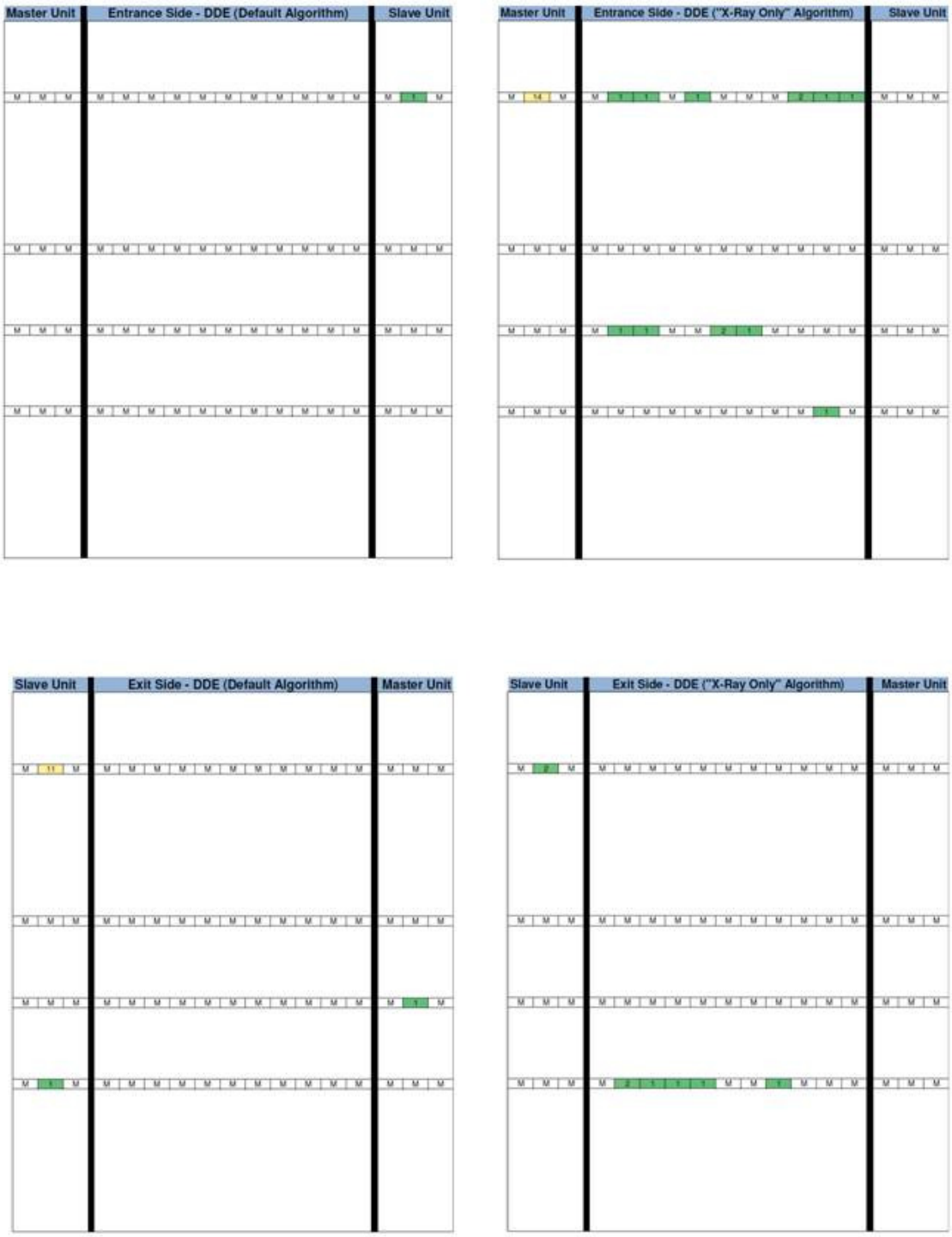


**Figure D.2.** Posting plots for DDE on the entrance and exit sides.

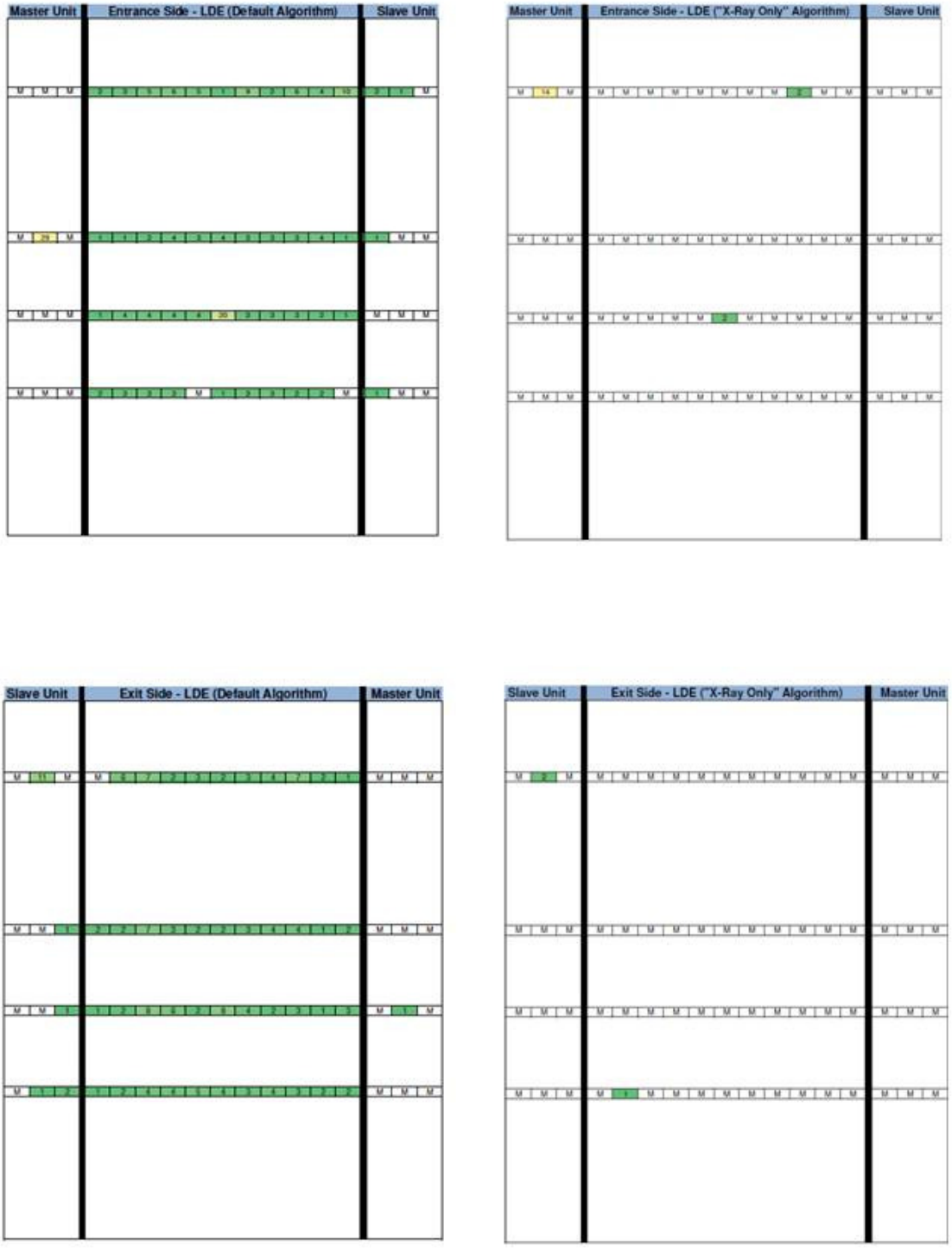


**Figure D.3.** Posting plots for LDE on the entrance and exit sides.

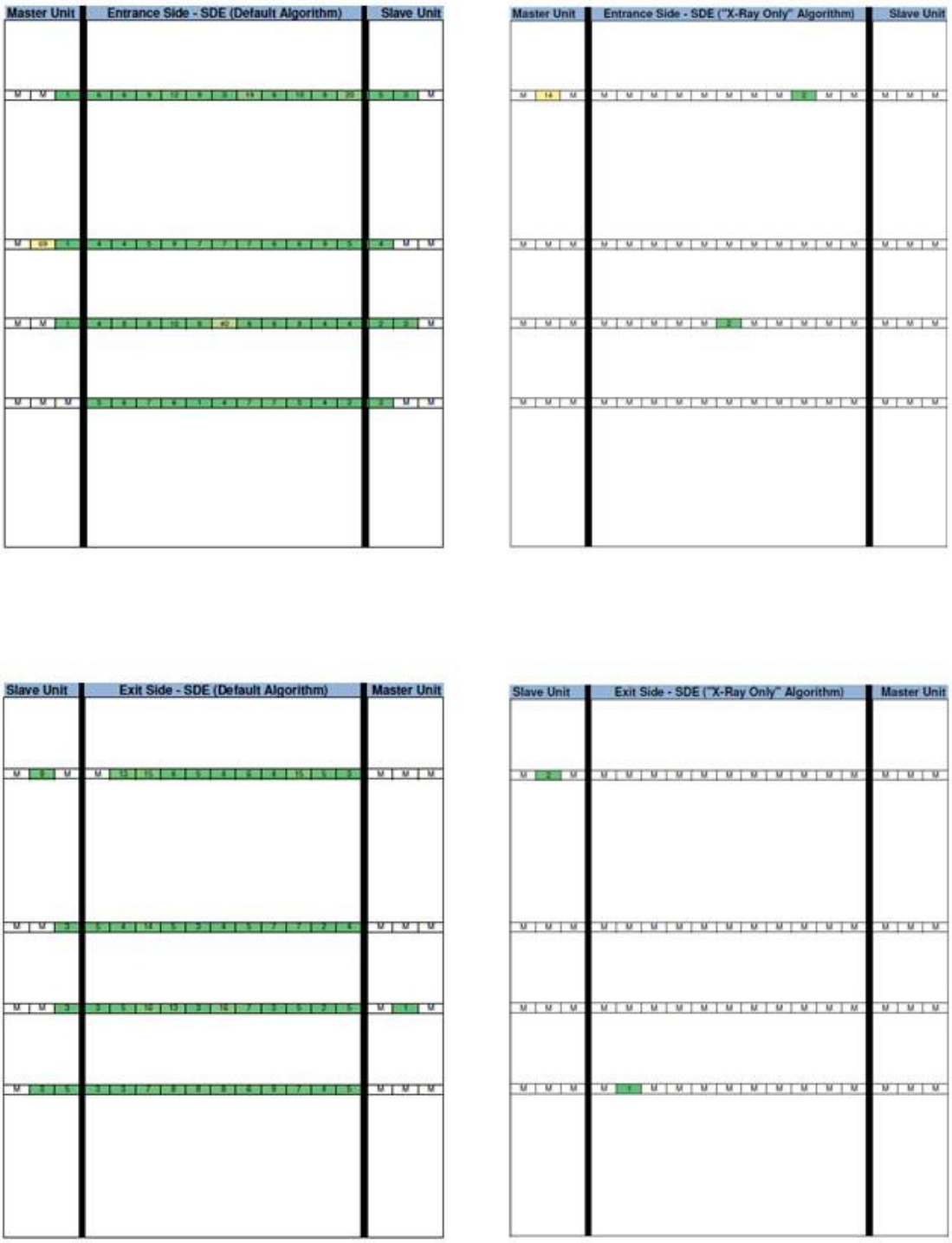


**Figure D.4.** Posting plots for SDE on the entrance and exit sides.

2. DATA ANALYSIS.

a. Basic statistics on a per screening basis are presented in Table D.2. Again, for the "average," an "M" was assumed to be one and for the "minimum," an "M" was assumed to be zero.

**Table D.2.** Dose per screening (mrem)

| | Evaluated Using Default Algorithm | | | Re-evaluated as "X-Ray Only" | | |
|---|---|---|---|---|---|---|
| | DDE | LDE | SDE | DDE | LDE | SDE |
| Maximum | 1.18E-04 | 3.11E-04 | 7.41E-04 | 1.50E-04 | 1.50E-04 | 1.50E-04 |
| "Average" | **1.15E-05** | **3.06E-05** | **6.05E-05** | **1.21E-05** | **1.20E-05** | **1.20E-05** |
| "Minimum" | 1.11E-06 | 2.74E-05 | 5.79E-05 | 2.76E-06 | 1.66E-06 | 1.66E-06 |

b. The individuals that will be around the system the most over the course of a year are the system operators. Therefore, for the following estimates a 2000 hour (h) work year (y) has been assumed. The number of screenings theoretically possible (based on system design specification), an upper bound (based on through-put observed at airports), and a possible (fraction of through-put observed) number of screenings are calculated below.

(1) Theoretically possible. A single screening requires 10 s; therefore, in a 2000 h work year, 720,000 screenings are theoretically possible.

$$\frac{2000\ h}{1\ y} \times \frac{3600\ s}{1\ h} \times \frac{1\ screening}{10\ s} = 720{,}000\ screenings\ per\ year$$

(2) Upper bound. Just less than 2000 screenings per day on a single Secure 1000 SP have been performed at busy airports (See Table F.1, Appendix F). The daily averages are for two shifts over approximately 16 h. Therefore, over a 2000 h work year, an upper bound for the number of screenings accomplished is 250,000.

$$\frac{2000\ screenings}{1\ d} \times \frac{1\ d}{2\ shifts} \times \frac{1\ shift}{8\ hr} \times \frac{2000\ h}{1\ y} = 250{,}000\ screenings\ per\ year$$

(3) Possible. The above upper bound estimate assumes an individual is near the Secure 1000 SP for the entire 2000 h work year. A Transportation Security Officer (TSO) would be at the edge of the inspection only a fraction of the work year. Therefore, for the following estimate it has been assumed that a TSO is at the edge of

the inspection zone for 1000 h (50 percent) of the work year. This results in 125,000 screenings per year.

$$\frac{2000\ screenings}{1\ d} \times \frac{1\ d}{2\ shifts} \times \frac{1\ shift}{8\ hr} \times \frac{1000\ h}{1\ y} = 125{,}000\ screenings\ per\ year$$

c. The estimated annual radiation dose to individuals just outside the inspection zone for three scenarios described above (Theoretical, Upper Bound, Possible) are provided in Tables D.3, D.4, and D.5. The values in Tables D.3, D.4, and D.5 are obtained by multiplying the appropriate number of screenings per year by the corresponding value from Table D.2.

**Table D.3.** Annual DDE estimates (mrem).

| | Evaluated Using Default Algorithm | | | Re-evaluated as "X-Ray Only" | | |
|---|---|---|---|---|---|---|
| | Theoretical | Upper Bound | Possible | Theoretical | Upper Bound | Possible |
| Maximum DDE | 85 | 30 | 15 | 108 | 38 | 19 |
| "Average" DDE | 8 | **3** | **1** | 9 | **3** | **2** |
| "Minimum" DDE | 0.80 | **0.28** | **0.14** | 2 | **1** | **0.3** |

**Table D.4.** Annual LDE estimates (mrem).

| | Evaluated Using Default Algorithm | | | Re-evaluated as "X-Ray Only" | | |
|---|---|---|---|---|---|---|
| | Theoretical | Upper Bound | Possible | Theoretical | Upper Bound | Possible |
| Max LDE | 224 | 78 | 39 | 108 | 38 | 19 |
| "Avg" LDE | 22 | **8** | **4** | 9 | **3** | **2** |
| "Min" LDE | 20 | **7** | **3** | 1 | **0.4** | **0.2** |

**Table D.5.** Annual SDE estimates (mrem).

| | Evaluated Using Default Algorithm | | | Re-evaluated as "X-Ray Only" | | |
|---|---|---|---|---|---|---|
| | Theoretical | Upper Bound | Possible | Theoretical | Upper Bound | Possible |
| Max SDE | 534 | 185 | 93 | 108 | 38 | 19 |
| "Avg" SDE | 44 | **15** | **8** | 9 | **3** | **2** |
| "Min" SDE | 42 | **14** | **7** | 1 | **0.4** | **0.2** |

# APPENDIX E
# MEASUREMENTS INSIDE THE INSPECTION ZONE (TSIF STUDY)

1. DOSIMETER MEASUREMENTS. The radiation doses measured on the 36 dosimeters mounted on the four "wings" of the system and at the tops of each unit (master and slave) after the 93,105 screenings are presented in Table E.1. Dose equivalents below the minimum reporting level (1 mrem) are reported as "M." Figures E.1 and E.2 show the dosimeter set up on the "wings" and at the tops of each unit, respectively. Figure E.3 contains color-coded posting plots showing the locations and relative intensities of the dosimeters' measurements for both the default algorithm and the "x-ray only" algorithm.

**Table E.1.** Radiation dose recorded by the dosimeters after 93,105 screenings (in mrem)

| | | Evaluated Using Default Algorithm | | | Re-evaluated Using "X-Ray Only" Algorithm | | |
|---|---|---|---|---|---|---|---|
| Participant No. (Monitoring Period) | Description | DDE | LDE | SDE | DDE | LDE | SDE |
| 1520 (Dec) | Master Unit, Exit Wing, 1.5 m, bag | 1 | 12 | 23 | 2 | 1 | 1 |
| 1521 (Dec) | Master Unit, Exit Wing, 1.5 m, no bag | M | 10 | 18 | 1 | M | M |
| 1522 (Dec) | Master Unit, Exit Wing, 1.0 m, no bag | 4 | 16 | 26 | 5 | 4 | 4 |
| 1523 (Dec) | Master Unit, Exit Wing, 1.0 m, bag | 6 | 65 | 148 | 7 | 6 | 6 |
| 1524 (Dec) | Master Unit, Exit Wing, 0.75 m, bag | 5 | 78 | 184 | 6 | 5 | 5 |
| 1525 (Dec) | Master Unit, Exit Wing, 0.75 m, no bag | 7 | 90 | 214 | 8 | 8 | 8 |
| 1526 (Dec) | Master Unit, Exit Wing, 0.5 m, no bag | 3 | 4 | 44 | 5 | 4 | 4 |
| 1527 (Dec) | Master Unit, Exit Wing, 0.5 m, bag | 5 | 81 | 194 | 6 | 5 | 5 |
| 1528 (Dec) | Slave Unit, Exit Wing, 1.5 m, no bag | 53 | 91 | 124 | 57 | 63 | 65 |
| 1529 (Dec) | Slave Unit, Exit Wing, 1.5 m, bag | 57 | 138 | 230 | 56 | 61 | 63 |
| 1530 (Dec) | Slave Unit, Exit Wing, 1.0 m, bag | 5 | 137 | 224 | 57 | 65 | 69 |
| 1531 (Dec) | Slave Unit, Exit Wing, 1.0 m, no bag | 83 | 83 | 78 | 57 | 64 | 66 |
| 1532 (Dec) | Slave Unit, Exit Wing, 0.75 m, no bag | 82 | 82 | 77 | 48 | 55 | 57 |
| 1533 (Dec) | Slave Unit, Exit Wing, 0.75 m, bag | 68 | 68 | 64 | 49 | 56 | 59 |
| 1534 (Dec) | Slave Unit, Exit Wing, 0.5 m, bag | 58 | 58 | 54 | 48 | 54 | 56 |
| 1535 (Dec) | Slave Unit, Exit Wing, 0.5 m, no bag | 66 | 66 | 61 | 44 | 51 | 53 |
| 1536 (Dec) | Slave Unit, Entrance Wing, 1.5 m, bag | 1 | 19 | 38 | 1 | 1 | 1 |
| 1537 (Dec) | Slave Unit, Entrance Wing, 1.5 m, no bag | 1 | 18 | 37 | 1 | 1 | 1 |
| 1538 (Dec) | Slave Unit, Entrance Wing, 1.0 m, no bag | 2 | 24 | 49 | 3 | 2 | 2 |
| 1539 (Dec) | Slave Unit, Entrance Wing, 1.0 m, bag | 4 | 40 | 87 | 4 | 4 | 4 |

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| | | Evaluated Using Default Algorithm | | | Re-evaluated Using "X-Ray Only" Algorithm | | |
|---|---|---|---|---|---|---|---|
| Participant No. (Monitoring Period) | Description | DDE | LDE | SDE | DDE | LDE | SDE |
| 1540 (Dec) | Slave Unit, Entrance Wing, 0.75 m, bag | 5 | 141 | 359 | 6 | 5 | 5 |
| 1541 (Dec) | Slave Unit, Entrance Wing, 0.75 m, no bag | 3 | 40 | 86 | 4 | 3 | 3 |
| 1542 (Dec) | Slave Unit, Entrance Wing, 0.5 m, no bag | 7 | 279 | 736 | 8 | 8 | 8 |
| 1543 (Dec) | Slave Unit, Entrance Wing, 0.5 m, bag | 14 | 230 | 581 | 13 | 13 | 13 |
| 1544 (Dec) | Master Unit, Entrance Wing, 1.5 m, no bag | 35 | 38 | 45 | 41 | 47 | 49 |
| 1545 (Dec) | Master Unit, Entrance Wing, 1.5 m, bag | 29 | 52 | 81 | 38 | 42 | 43 |
| 1546 (Dec) | Master Unit, Entrance Wing, 1.0 m, bag | 53 | 53 | 49 | 39 | 43 | 43 |
| 1547 (Dec) | Master Unit, Entrance Wing, 1.0 m, no bag | 32 | 39 | 45 | 37 | 40 | 41 |
| 1548 (Dec) | Master Unit, Entrance Wing, 0.75 m, no bag | 33 | 39 | 46 | 37 | 41 | 42 |
| 1549 (Dec) | Master Unit, Entrance Wing, 0.75 m, bag | 28 | 43 | 61 | 34 | 38 | 38 |
| 1550 (Dec) | Master Unit, Entrance Wing, 0.5 m, bag | 36 | 65 | 90 | 34 | 37 | 38 |
| 1551 (Dec) | Master Unit, Entrance Wing, 0.5 m, no bag | 29 | 39 | 50 | 34 | 37 | 37 |
| 1552 (Dec) | Master Unit, Top Center, bag | 105 | 304 | 557 | 103 | 118 | 125 |
| 1553 (Dec) | Master Unit, Top Center, no bag | 102 | 230 | 374 | 104 | 117 | 122 |
| 1554 (Dec) | Slave Unit, Top Center, bag | 3 | 9 | 13 | 3 | 2 | 2 |
| 1555 (Dec) | Slave Unit, Top Center, no bag | 4 | 12 | 15 | 5 | 5 | 5 |

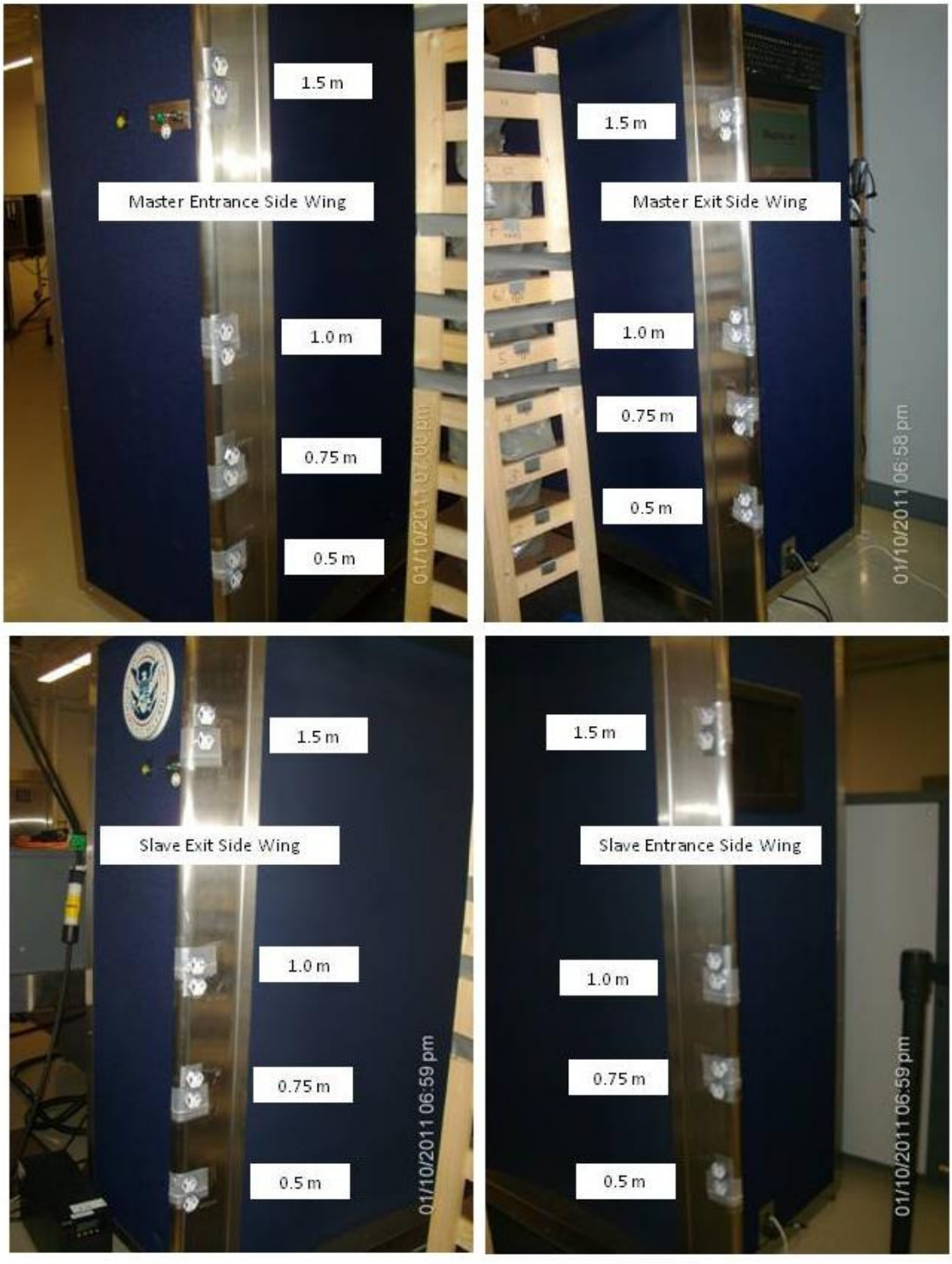


**Figure E.1.** Arrangement of dosimeters on wings


**Figure E.2.** Arrangement of dosimeters at the tops of the units.

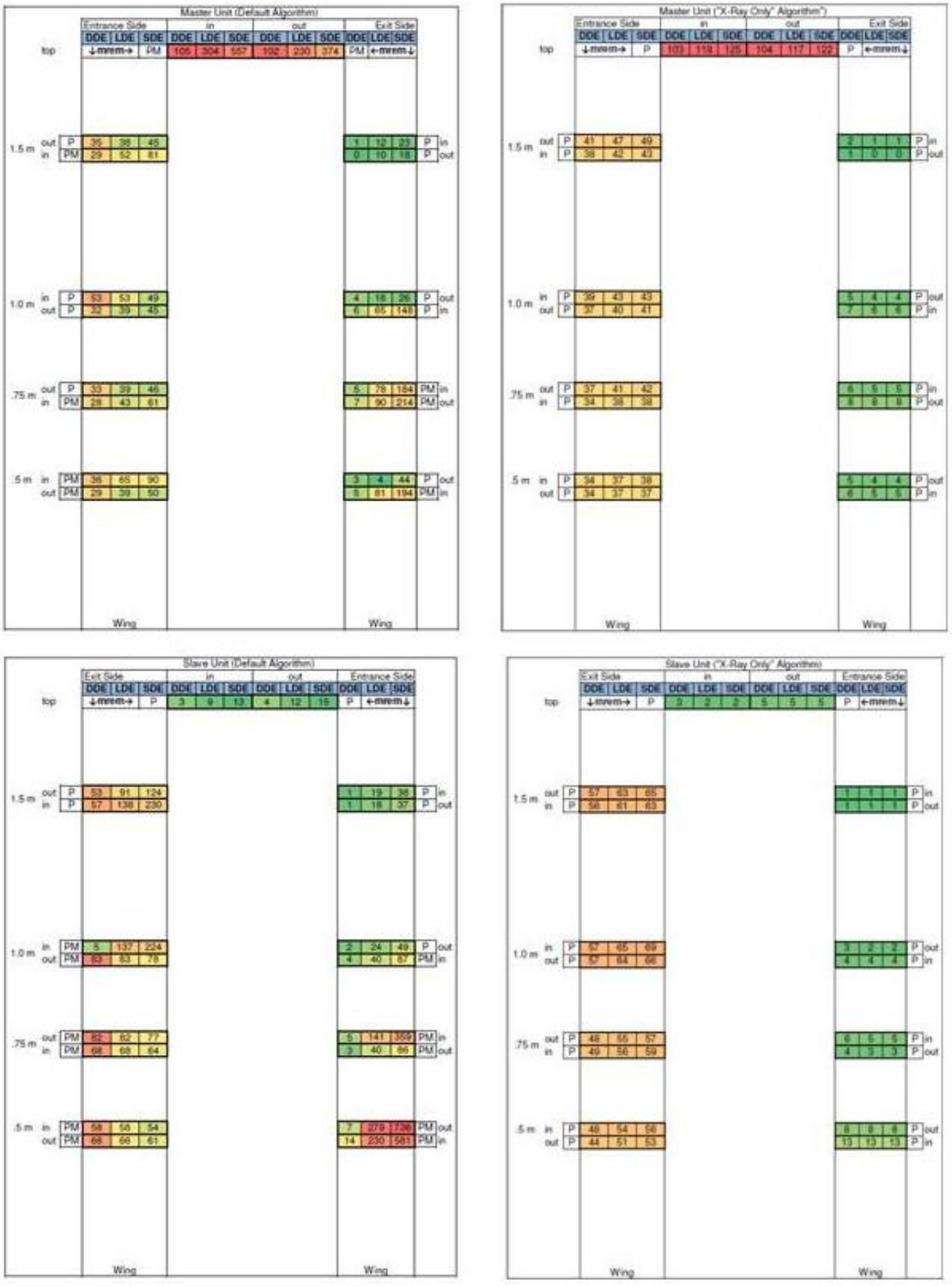


**Figure E.3.** Posting Plots

2. DATA ANALYSIS.

a. Basic statistics for the measurements made at each "wing" are presented in Tables E.2 - E.5. From the tables it is evident that the DDEs measured at the master unit exit side and the slave unit entrance side are significantly lower than at the other two "wings." This is most likely due to a slight misalignment of the two units as shown in Figure E.4(a). A slight misalignment of this type is not a radiation safety issue. However, if the misalignment becomes large, as shown in Figure E.4(b), the primary x-ray beam may not be completely intercepted by the wings and could result in slightly elevated radiation levels outside the inspection zone. Physical misalignments large enough to cause elevated levels outside the inspection zone can be easily seen by simply looking along the edges of the two units. Physical misalignments will also be readily detected with appropriate instruments during a radiation survey of the system.

**Table E.2.** Master unit entrance side wing dosimeters' basic statistics (mrem)

| | Default Algorithm | | | "X-Ray Only" Algorithm | | |
|---|---|---|---|---|---|---|
| N = 8 | DDE | LDE | SDE | DDE | LDE | SDE |
| Minimum | 28 | 38 | 45 | 34 | 37 | 37 |
| Mean | 34 | 46 | 58 | 37 | 41 | 41 |
| Standard Deviation | 8 | 10 | 18 | 3 | 3 | 4 |
| Maximum | 53 | 65 | 90 | 41 | 47 | 49 |
| Range | 25 | 27 | 45 | 7 | 10 | 12 |

**Table E.3.** Master unit exit side wing dosimeters' basic statistics (mrem)

| | Default Algorithm | | | "X-Ray Only" Algorithm | | |
|---|---|---|---|---|---|---|
| N = 8 | DDE | LDE | SDE | DDE | LDE | SDE |
| Minimum | 0 | 4 | 18 | 1 | 0 | 0 |
| Mean | 4 | 45 | 106 | 5 | 4 | 4 |
| Standard Deviation | 2 | 37 | 86 | 2 | 3 | 3 |
| Maximum | 7 | 90 | 214 | 8 | 8 | 8 |
| Range | 7 | 86 | 196 | 7 | 8 | 8 |

**Table E.4.** Slave unit exit side wing dosimeters' basic statistics (mrem)

| | Default Algorithm | | | "X-Ray Only" Algorithm | | |
|---|---|---|---|---|---|---|
| N = 8 | DDE | LDE | SDE | DDE | LDE | SDE |
| Minimum | 5 | 58 | 54 | 44 | 51 | 53 |
| Mean | 59 | 90 | 114 | 52 | 59 | 61 |
| Standard Deviation | 24 | 31 | 73 | 5 | 5 | 6 |
| Maximum | 83 | 138 | 230 | 57 | 65 | 69 |
| Range | 78 | 80 | 176 | 13 | 14 | 16 |

**Table E.5.** Slave unit entrance side wing dosimeters' basic statistics (mrem)

| | Default Algorithm | | | "X-Ray Only" Algorithm | | |
|---|---|---|---|---|---|---|
| N = 8 | DDE | LDE | SDE | DDE | LDE | SDE |
| Minimum | 1 | 18 | 37 | 1 | 1 | 1 |
| Mean | 5 | 99 | 247 | 5 | 5 | 5 |
| Standard Deviation | 4 | 105 | 278 | 4 | 4 | 4 |
| Maximum | 14 | 279 | 736 | 13 | 13 | 13 |
| Range | 13 | 261 | 699 | 12 | 12 | 12 |

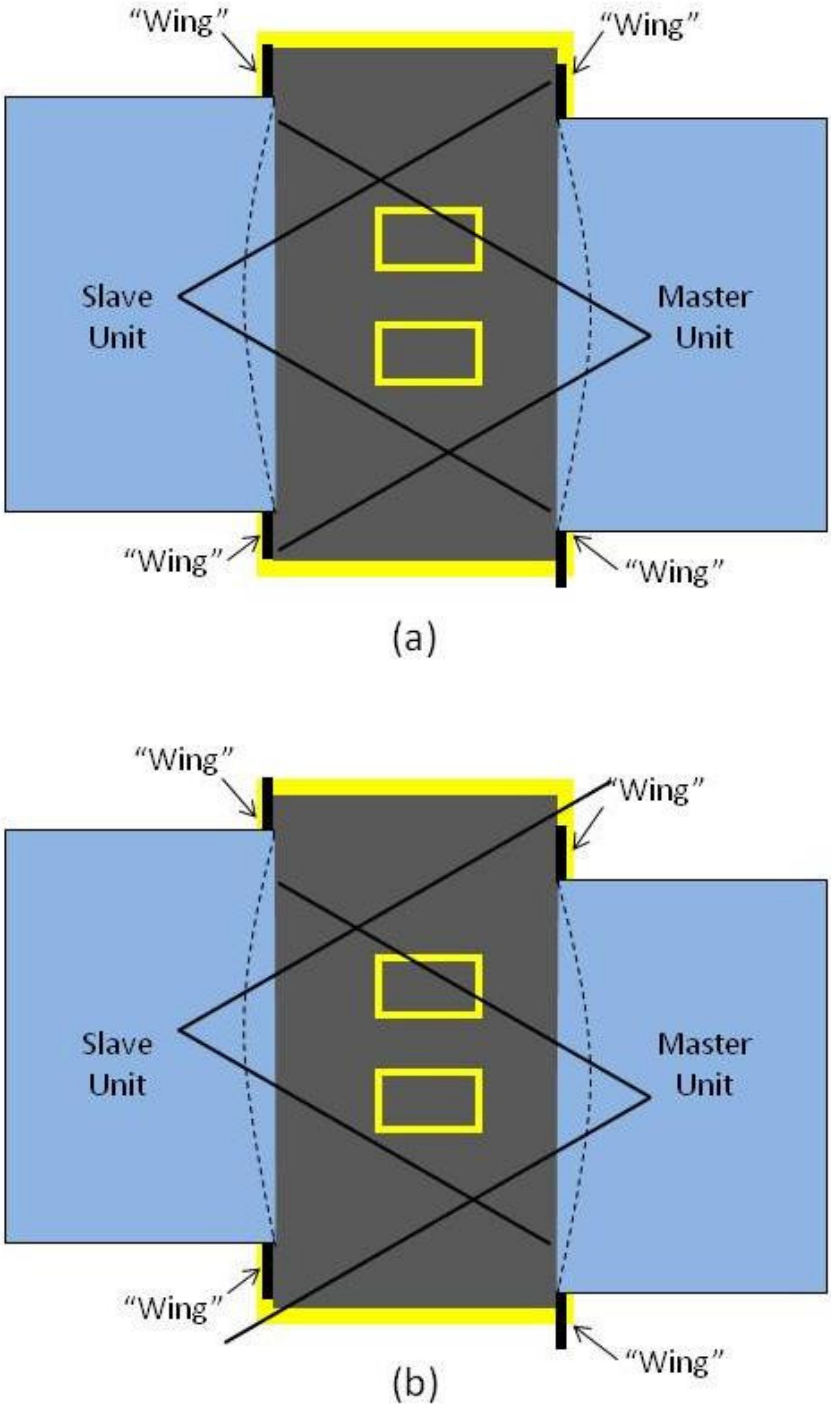


**Figure E.4.** Schematic of potential misalignment of master and slave units. (a) A minor misalignment that is not a radiation safety concern. (b) A larger misalignment that could result in elevated radiation levels outside the inspection zone.

b. Eighteen pairs of dosimeters were mounted in the inspection zone. For each pair of dosimeters, one was placed in a plastic bag and one was not. For each pair, the ratios of the measurements in a bag to those outside the bag were calculated (a total of three ratios — for DDE, LDE and SDE — for each pair of dosimeters). These ratios are provided in Table E.6. The results obtained using the default algorithm show considerable variation (mostly in the LDE and SDE measurements) that does not seem to correlate with whether the dosimeter was in a plastic bag or not. When the doses were re-evaluated using the "x-ray only" algorithm, most of this variation was eliminated. In both sets of data, the largest ratios typically occurred when one of the measured doses was very small. This is to be expected when the measured doses are close to the minimum reporting level. Both sets of data indicate that placing the dosimeters in plastic bags does not significantly affect the measured doses.

**Table E.6.** Ratio of doses measured in the plastic bag to doses measured without a plastic bag at each location.

| | | Evaluated Using Default Algorithm | | | Re-evaluated Using "X-Ray Only" Algorithm | | |
|---|---|---|---|---|---|---|---|
| Participant Nos. (Monitoring Period) | Description | DDE | LDE | SDE | DDE | LDE | SDE |
| 1520/1521 | Master Unit, Exit Wing, 1.5 m | * | 1.2 | 1.3 | 2.0 | * | * |
| 1523/1522 | Master Unit, Exit Wing, 1.0 m | 1.5 | 4.1 | 5.7 | 1.4 | 1.5 | 1.5 |
| 1524/1525 | Master Unit, Exit Wing, 0.75 m | 0.7 | 0.9 | 0.9 | 0.8 | 0.6 | 0.6 |
| 1527/1526 | Master Unit, Exit Wing, 0.5 m | 1.7 | 20.3 | 4.4 | 1.2 | 1.3 | 1.3 |
| 1529/1528 | Slave Unit, Exit Wing, 1.5 m | 1.1 | 1.5 | 1.9 | 1.0 | 1.0 | 1.0 |
| 1530/1531 | Slave Unit, Exit Wing, 1.0 m | 0.1 | 1.7 | 2.9 | 1.0 | 1.0 | 1.0 |
| 1533/1532 | Slave Unit, Exit Wing, 0.75 m | 0.8 | 0.8 | 0.8 | 1.0 | 1.0 | 1.0 |
| 1534/1535 | Slave Unit, Exit Wing, 0.5 m | 0.9 | 0.9 | 0.9 | 1.1 | 1.1 | 1.1 |
| 1536/1537 | Slave Unit, Entrance Wing, 1.5 m | 1.0 | 1.1 | 1.0 | 1.0 | 1.0 | 1.0 |
| 1539/1538 | Slave Unit, Entrance Wing, 1.0 m | 2.0 | 1.7 | 1.8 | 1.3 | 2.0 | 2.0 |
| 1540/1541 | Slave Unit, Entrance Wing, 0.75 m | 1.7 | 3.5 | 4.2 | 1.5 | 1.7 | 1.7 |
| 1543/1542 | Slave Unit, Entrance Wing, 0.5 m | 2.0 | 0.8 | 0.8 | 1.6 | 1.6 | 1.6 |
| 1545/1544 | Master Unit, Entrance Wing, 1.5 m | 0.8 | 1.4 | 1.8 | 0.9 | 0.9 | 0.9 |
| 1546/1547 | Master Unit, Entrance Wing, 1.0 m | 1.7 | 1.4 | 1.1 | 1.1 | 1.1 | 1.0 |
| 1549/1548 | Master Unit, Entrance Wing, 0.75 m | 0.8 | 1.1 | 1.3 | 0.9 | 0.9 | 0.9 |
| 1550/1551 | Master Unit, Entrance Wing, 0.5 m | 1.2 | 1.7 | 1.8 | 1.0 | 1.0 | 1.0 |
| 1552/1553 | Master Unit, Top Center | 1.0 | 1.3 | 1.5 | 1.0 | 1.0 | 1.0 |
| 1554/1554 | Slave Unit, Top Center | 0.8 | 0.8 | 0.9 | 0.6 | 0.4 | 0.4 |

* For these three doses, the result on dosimeter no. 1521 was an "M." Therefore, a ratio cannot be calculated.

c. Basic statistics on a per screening basis for the 32 dosimeters mounted on the system "wings" are presented in Table E.7. The same statistics for the 16 dosimeters not in a plastic bag and the 16 dosimeter that were in plastic bags are provided in Tables E.8 and E.9, respectively. The same three sets of statistics using only the dosimeters at a height of 1 m are provided in Tables E.10 - E.12. The maximum value in Table E.12 (dosimeters in a bag at 1 m height) will be compared with the results from the individual airports in Appendix F.

**Table E.7.** All wing dosimeters' basic statistics (mrem per screening)

| | Evaluated Using Default Algorithm | | | Re-evaluated Using "X-Ray Only" Algorithm | | |
|---|---|---|---|---|---|---|
| N = 32 | DDE | LDE | SDE | DDE | LDE | SDE |
| Minimum | 0.000E+00 | 4.296E-05 | 1.933E-04 | 1.074E-05 | 0.000E+00 | 0.000E+00 |
| Mean | 2.735E-04 | 7.512E-04 | 1.411E-03 | 2.652E-04 | 2.900E-04 | 2.984E-04 |
| Standard Deviation | 2.839E-04 | 6.505E-04 | 1.714E-03 | 2.260E-04 | 2.597E-04 | 2.698E-04 |
| Maximum | 8.915E-04 | 2.997E-03 | 7.905E-03 | 6.122E-04 | 6.981E-04 | 7.411E-04 |
| Range | 8.915E-04 | 2.954E-03 | 7.712E-03 | 6.015E-04 | 6.981E-04 | 7.411E-04 |

**Table E.8.** All wing dosimeters' basic statistics - no bag (mrem per screening)

| | Evaluated Using Default Algorithm | | | Re-evaluated Using "X-Ray Only" Algorithm | | |
|---|---|---|---|---|---|---|
| N = 16 | DDE | LDE | SDE | DDE | LDE | SDE |
| Minimum | 0.000E+00 | 4.296E-05 | 1.933E-04 | 1.074E-05 | 0.000E+00 | 0.000E+00 |
| Mean | 2.954E-04 | 6.431E-04 | 1.165E-03 | 2.618E-04 | 2.873E-04 | 2.954E-04 |
| Standard Deviation | 3.161E-04 | 7.000E-04 | 1.867E-03 | 2.322E-04 | 2.671E-04 | 2.763E-04 |
| Maximum | 8.915E-04 | 2.997E-03 | 7.905E-03 | 6.122E-04 | 6.874E-04 | 7.089E-04 |
| Range | 8.915E-04 | 2.954E-03 | 7.712E-03 | 6.015E-04 | 6.874E-04 | 7.089E-04 |

**Table E.9.** All wing dosimeters' basic statistics - in bag (mrem per screening)

| | Evaluated Using Default Algorithm | | | Re-evaluated Using "X-Ray Only" Algorithm | | |
|---|---|---|---|---|---|---|
| N = 16 | DDE | LDE | SDE | DDE | LDE | SDE |
| Minimum | 1.074E-05 | 1.289E-04 | 2.470E-04 | 1.074E-05 | 1.074E-05 | 1.074E-05 |
| Mean | 2.517E-04 | 8.592E-04 | 1.656E-03 | 2.685E-04 | 2.927E-04 | 3.014E-04 |
| Standard Deviation | 2.561E-04 | 5.996E-04 | 1.568E-03 | 2.272E-04 | 2.608E-04 | 2.722E-04 |
| Maximum | 7.304E-04 | 2.470E-03 | 6.240E-03 | 6.122E-04 | 6.981E-04 | 7.411E-04 |
| Range | 7.196E-04 | 2.341E-03 | 5.993E-03 | 6.015E-04 | 6.874E-04 | 7.304E-04 |

**Table E.10.** Wing dosimeters' basic statistics - 1 m (mrem per screening)

| | Evaluated Using Default Algorithm | | | Re-evaluated Using "X-Ray Only" Algorithm | | |
|---|---|---|---|---|---|---|
| N = 8 | DDE | LDE | SDE | DDE | LDE | SDE |
| Minimum | 2.148E-05 | 1.718E-04 | 2.793E-04 | 3.222E-05 | 2.148E-05 | 2.148E-05 |
| Mean | 2.537E-04 | 6.136E-04 | 9.479E-04 | 2.806E-04 | 3.061E-04 | 3.155E-04 |
| Standard Deviation | 3.236E-04 | 4.167E-04 | 7.140E-04 | 2.576E-04 | 2.968E-04 | 3.096E-04 |
| Maximum | 8.915E-04 | 1.471E-03 | 2.406E-03 | 6.122E-04 | 6.981E-04 | 7.411E-04 |
| Range | 8.700E-04 | 1.300E-03 | 2.127E-03 | 5.800E-04 | 6.767E-04 | 7.196E-04 |

**Table E.11.** Wing dosimeters' basic statistics - no bag, 1 m (mrem per screening)

| | Evaluated Using Default Algorithm | | | Re-evaluated Using "X-Ray Only" Algorithm | | |
|---|---|---|---|---|---|---|
| N = 4 | DDE | LDE | SDE | DDE | LDE | SDE |
| Minimum | 2.148E-05 | 1.718E-04 | 2.793E-04 | 3.222E-05 | 2.148E-05 | 2.148E-05 |
| Mean | 3.249E-04 | 4.350E-04 | 5.317E-04 | 2.739E-04 | 2.954E-04 | 3.034E-04 |
| Standard Deviation | 4.053E-04 | 3.211E-04 | 2.308E-04 | 2.808E-04 | 3.217E-04 | 3.319E-04 |
| Maximum | 8.915E-04 | 8.915E-04 | 8.378E-04 | 6.122E-04 | 6.874E-04 | 7.089E-04 |
| Range | 8.700E-04 | 7.196E-04 | 5.585E-04 | 5.800E-04 | 6.659E-04 | 6.874E-04 |

**Table E.12.** Wing dosimeters' basic statistics - in bag, 1 m (mrem per screening)

| | Evaluated Using Default Algorithm | | | Re-evaluated Using "X-Ray Only" Algorithm | | |
|---|---|---|---|---|---|---|
| N = 4 | DDE | LDE | SDE | DDE | LDE | SDE |
| Minimum | 4.296E-05 | 4.296E-04 | 5.263E-04 | 4.296E-05 | 4.296E-05 | 4.296E-05 |
| Mean | 1.826E-04 | 7.921E-04 | 1.364E-03 | 2.873E-04 | 3.168E-04 | 3.276E-04 |
| Standard Deviation | 2.579E-04 | 4.660E-04 | 8.211E-04 | 2.754E-04 | 3.189E-04 | 3.363E-04 |
| Maximum | **5.692E-04** | **1.471E-03** | **2.406E-03** | **6.122E-04** | **6.981E-04** | **7.411E-04** |
| Range | 5.263E-04 | 1.042E-03 | 1.880E-03 | 5.692E-04 | 6.552E-04 | 6.981E-04 |

c. Basic statistics on a per screening basis for the four dosimeters mounted at the tops of the units are presented in Table E.13. The same statistics for the two dosimeters not in a plastic bag and the two dosimeters that were in plastic bags are provided in Tables E.14 and E.15, respectively. It should be noted that the dosimeters at the top of the slave unit were shielded by the top of the water phantom (See Table E.1) while the two at the top of the master unit were not. The maximum value in Table E.15 (dosimeters in a bag at center top) will be compared with the results from the individual airports in Appendix F.

**Table E.13.** Top dosimeters' basic statistics (mrem per screening)

| | Evaluated Using Default Algorithm | | | Re-evaluated Using "X-Ray Only" Algorithm | | |
|---|---|---|---|---|---|---|
| N = 4 | DDE | LDE | SDE | DDE | LDE | SDE |
| Minimum | 3.222E-05 | 9.667E-05 | 1.396E-04 | 3.222E-05 | 2.148E-05 | 2.148E-05 |
| Mean | 5.746E-04 | 1.490E-03 | 2.575E-03 | 5.773E-04 | 6.498E-04 | 6.820E-04 |
| Standard Deviation | 6.203E-04 | 1.623E-03 | 2.913E-03 | 6.171E-04 | 7.071E-04 | 7.444E-04 |
| Maximum | 1.128E-03 | 3.265E-03 | 5.982E-03 | 1.117E-03 | 1.267E-03 | 1.343E-03 |
| Range | 1.096E-03 | 3.168E-03 | 5.843E-03 | 1.085E-03 | 1.246E-03 | 1.321E-03 |

**Table E.14.** Top dosimeters' basic statistics - no bag (mrem per screening)

| | Evaluated Using Default Algorithm | | | Re-evaluated Using "X-Ray Only" Algorithm | | |
|---|---|---|---|---|---|---|
| N = 2 | DDE | LDE | SDE | DDE | LDE | SDE |
| Minimum | 4.296E-05 | 1.289E-04 | 1.611E-04 | 5.370E-05 | 5.370E-05 | 5.370E-05 |
| Mean | 5.692E-04 | 1.300E-03 | 2.089E-03 | 5.854E-04 | 6.552E-04 | 6.820E-04 |
| Standard Deviation | 7.443E-04 | 1.656E-03 | 2.727E-03 | 7.519E-04 | 8.506E-04 | 8.886E-04 |
| Maximum | 1.096E-03 | 2.470E-03 | 4.017E-03 | 1.117E-03 | 1.257E-03 | 1.310E-03 |
| Range | 1.053E-03 | 2.341E-03 | 3.856E-03 | 1.063E-03 | 1.203E-03 | 1.257E-03 |

**Table E.15.** Top dosimeters' basic statistics - in bag (mrem per screening)

| | Evaluated Using Default Algorithm | | | Re-evaluated Using "X-Ray Only" Algorithm | | |
|---|---|---|---|---|---|---|
| N = 2 | DDE | LDE | SDE | DDE | LDE | SDE |
| Minimum | 3.222E-05 | 9.667E-05 | 1.396E-04 | 3.222E-05 | 2.148E-05 | 2.148E-05 |
| Mean | 5.800E-04 | 1.681E-03 | 3.061E-03 | 5.692E-04 | 6.444E-04 | 6.820E-04 |
| Standard Deviation | 7.747E-04 | 2.240E-03 | 4.132E-03 | 7.595E-04 | 8.810E-04 | 9.342E-04 |
| Maximum | **1.128E-03** | **3.265E-03** | **5.982E-03** | **1.106E-03** | **1.267E-03** | **1.343E-03** |
| Range | 1.096E-03 | 3.168E-03 | 5.843E-03 | 1.074E-03 | 1.246E-03 | 1.321E-03 |

# APPENDIX F
# MEASUREMENT AT THE "WINGS" AT SELECTED AIRPORTS

## 1. DOSIMETER MEASUREMENTS.

a. From April 2010 to August 2011 Landauer® Luxel®+ OSL dosimeters were mounted on 25 different Rapiscan Secure 1000SP systems at six different airports. One Rapiscan Secure 1000SP was monitored over three different time periods (labeled as 1-1(a), 1-1(b), and 1-1(c) in Tables F.1 through F.7) and another system was monitored over two different time periods (labeled as 2-1(a) and 2-1(b) in Tables F.1 through F.7.) Therefore, a total of 28 sets of data were collected.

b. The dosimeters were left in place from a month to almost 6 months, with most remaining in place for 2 to 3 months. Typically, six dosimeters were mounted on each system. The locations of the six dosimeters are shown (numbers 1 through 6) in Figure F.1. Dosimeters at locations 1-4 were mounted on the metal "wings" of the system approximately 1 meter from the floor. Dosimeters at locations 5 and 6 were mounted on the metal frames at the top of the system. All dosimeters were placed in a plastic bag before mounting on the system (facing the radiation source). The bag was attached to the system with tape and a custody seal to prevent tampering. Neither the tape nor the custody seal covered the face of the dosimeter. The first system monitored only had 4 dosimeters which were mounted in locations 1-3 and 6 in Figure F.1.

c. For the systems monitored, a summary of the number of screenings, monitoring time period, and the average daily screenings are presented in Table F.1. The total doses (DDE, LDE, and SDE) measured on the dosimeters at the wings and tops for the various monitoring periods are presented in Tables F.2 and F.3, respectively. For the following analyses, results less than the minimum reporting level that were reported as "M" have been assumed to be zero mrem. The total doses were normalized for the number of screenings performed and the average dose per screening for the wing dosimeters and top dosimeters were calculated and are presented in Tables F.4 and F.5, respectively.

d. The ratios of the dose per screening measured at the airports' system wings to the maximum dose per screening at a height of 1 m from the TSIF measurements are presented in Table F.6. Similar ratios for the top-center dosimeters are presented in Table F.7. Most of the ratios are less than one, indicating the doses at the six monitored locations inside the inspection zone are lower at the airports than for the

system at the TSIF. Therefor n zone at the airports would not be expecte t r utside the inspection zone at the TSIF.

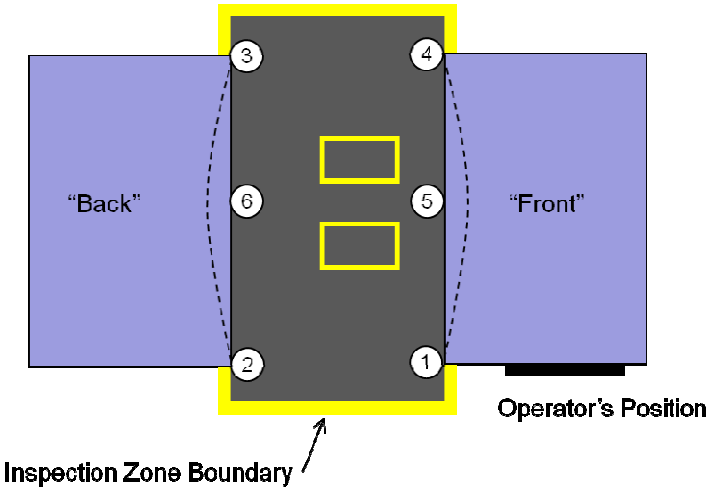


**Figure F.1.** Ai t si r locations.

**Table F.1.** o u 00 SP monitoring

| Airport Code | Serial No. | r t- #  | Screenings | Deployed | Removed | of s | screenings per day |
|---|---|---|---|---|---|---|---|
| BOS | S50948002 | 1-1 ) | 80,785 | 21-Apr-10 | 23-Jun-10 | 63 | 1282 |
| BOS | S50948002 | 1-1 ) | 64,482 | 23-Jun-10 | 23-Aug-10 | 61 | 1057 |
| BOS | S50948002 | 1-1 ) | 89,018 | 28-Apr-11 | 11-Jul-11 | 74 | 1203 |
| BOS | S51006006 | 1-2 | 68,944 | 23-Jun-10 | 23-Aug-10 | 61 | 1130 |
| BOS | S50948003 | 1-3 | 95,485 | 28-Apr-11 | 11-Jul-11 | 74 | 1290 |
| BOS | S51006004 | 1-4 | 112,868 | 28-Apr-11 | 11-Jul-11 | 74 | 1525 |
| BOS | S50951003 | 1-5 | 100,027 | 28-Apr-11 | 11-Jul-11 | 74 | 1352 |
| CVG | S50949003 | 2-1 ) | 21,742 | 10-Jun-10 | 8-Jul-10 | 28 | 777 |
| CVG | S50949003 | 2-1 ) | 49,905 | 8-Jul-10 | 15-Sep-10 | 69 | 723 |
| CVG | S51005005 | 2-2 | 5,319 | 10-Jun-10 | 8-Jul-10 | 28 | 190 |
| CVG | S51003014 | 2-3 | 6,329 | 8-Jul-10 | 15-Sep-10 | 69 | 92 |
| LAX | S50950002 | 3-1 | 71,477 | 1-Jul-10 | 14-Dec-10 | ; | 431 |
| LAX | S50949001 | 3-2 | 71,646 | 1-Jul-10 | 14-Dec-10 | ; | 432 |
| LAX | S51024010 | 3-3 | 132,273 | 18-May-11 | 4-Aug-11 | 78 | 1696 |
| LAX | S51024011 | 3-4 | 75,043 | 18-May-11 | 4-Aug-11 | 78 | 962 |
| LAX | S51013005 | 3-5 | 101,639 | 18-May-11 | 4-Aug-11 | 78 | 1303 |
| LAX | S51013006 | 3-6 | 138,386 | 18-May-11 | 4-Aug-11 | 78 | 1774 |
| ORD | S51002014 | 4-1 | 63,864 | 20-Jan-11 | 31-Mar-11 | 70 | 912 |
| ORD | S51002011 | 4-2 | 53,295 | 20-Jan-11 | 31-Mar-11 | 70 | 761 |
| ORD | S51002008 | 4-3 | 64,130 | 20-Jan-11 | 31-Mar-11 | 70 | 916 |
| ORD | S51002005 | 4-4 | 58,877 | 20-Jan-11 | 31-Mar-11 | 70 | 841 |

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| Airport Code | Serial No. | Airport-system# | Screenings | Deployed | Removed | # of days | screenings per day |
|---|---|---|---|---|---|---|---|
| PVD | S51009004 | 5-1 | 27,544 | 24-Mar-11 | 1-Jul-11 | 99 | 278 |
| PVD | S51009005 | 5-2 | 72,091 | 24-Mar-11 | 1-Jul-11 | 99 | 728 |
| PVD | S51009006 | 5-3 | 72,305 | 24-Mar-11 | 1-Jul-11 | 99 | 730 |
| IAD | S51039009 | 6-1 | 120,822 | 15-Apr-11 | 17-Aug-11 | 124 | 974 |
| IAD | S51039007 | 6-2 | 12,113 | 15-Apr-11 | 17-Aug-11 | 124 | 98 |
| IAD | S51039002 | 6-3 | 78,098 | 15-Apr-11 | 17-Aug-11 | 124 | 630 |
| IAD | S51039004 | 6-4 | 100,576 | 15-Apr-11 | 17-Aug-11 | 124 | 811 |

**Table F.2.** Cumulative dose at system “wings.”

| Airport-system# | Algorithm | Total Dose Measured on Wing Dosimeters (mrem) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location 1 (master exit) | | | Location 2 (slave exit) | | | Location 3 (slave entrance) | | | Location 4 (master entrance) | | |
| | | DDE | LDE | SDE | DDE | LDE | SDE | DDE | LDE | SDE | DDE | LDE | SDE |
| 1-1(a) | Default | 2 | 2 | 4 | 50 | 54 | 56 | 11 | 11 | 13 | -- | -- | -- |
| | "X-Ray Only" | 6 | 4 | 4 | 52 | 56 | 56 | 14 | 13 | 13 | -- | -- | -- |
| 1-1(b) | Default | M (0) | M (0) | 1 | 36 | 36 | 45 | 22 | 29 | 43 | 9 | 9 | 8 |
| | "X-Ray Only" | M (0) | M (0) | M (0) | 27 | 28 | 28 | 23 | 24 | 24 | 9 | 8 | 8 |
| 1-1(c) | Default | 9 | 95 | 182 | 29 | 67 | 128 | 47 | 46 | 65 | 49 | 57 | 88 |
| | "X-Ray Only" | 40 | 42 | 42 | 36 | 39 | 39 | 38 | 42 | 42 | 43 | 45 | 45 |
| 1-2 | Default | 33 | 39 | 61 | 28 | 37 | 55 | 40 | 40 | 38 | 25 | 39 | 60 |
| | "X-Ray Only" | 28 | 29 | 29 | 29 | 30 | 30 | 26 | 27 | 27 | 29 | 30 | 30 |
| 1-3 | Default | 3 | 2 | 2 | 48 | 69 | 104 | 19 | 81 | 163 | 8 | 15 | 15 |
| | "X-Ray Only" | 29 | 29 | 29 | 51 | 55 | 55 | 40 | 44 | 45 | 9 | 8 | 8 |
| 1-4 | Default | 3 | 17 | 35 | 46 | 61 | 76 | M (0) | M (0) | M (0) | 63 | 62 | 77 |
| | "X-Ray Only" | 5 | 3 | 3 | 54 | 58 | 58 | 7 | 5 | 5 | 52 | 57 | 57 |
| 1-5 | Default | 4 | 3 | 2 | 37 | 42 | 65 | 8 | 29 | 59 | 50 | 54 | 84 |
| | "X-Ray Only" | M (0) | M (0) | M (0) | 36 | 40 | 40 | 10 | 8 | 8 | 45 | 48 | 48 |
| 2-1(a) | Default | M (0) | 8 | 30 | 4 | 4 | 9 | M (0) | 12 | 28 | 3 | 7 | 15 |
| | "X-Ray Only" | M (0) | M (0) | M (0) | 1 | 1 | 1 | 3 | 2 | 2 | 3 | 3 | 3 |
| 2-1(b) | Default | 17 | 17 | 14 | 10 | 10 | 16 | 9 | 24 | 44 | 13 | 18 | 26 |
| | "X-Ray Only" | 6 | 9 | 9 | 7 | 10 | 10 | 12 | 14 | 14 | 14 | 17 | 17 |
| 2-2 | Default | M (0) | 3 | 7 | M (0) | M (0) | M (0) | M (0) | M (0) | M (0) | 2 | 2 | 1 |
| | "X-Ray Only" | 1 | M (0) | M (0) | M (0) | M (0) | M (0) | M (0) | M (0) | M (0) | 1 | M (0) | M (0) |

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| Airport-system# | Algorithm | Total Dose Measured on Wing Dosimeters (mrem) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location 1 (master exit) | | | Location 2 (slave exit) | | | Location 3 (slave entrance) | | | Location 4 (master entrance) | | |
| | | DDE | LDE | SDE | DDE | LDE | SDE | DDE | LDE | SDE | DDE | LDE | SDE |
| 2-3 | Default | M (0) | 1 | 4 | M (0) | M (0) | M (0) | M (0) | 1 | 5 | M (0) | M (0) | 1 |
| | "X-Ray Only" | M (0) | 1 | 1 | M (0) | M (0) | M (0) | M (0) | 1 | 1 | M (0) | M (0) | M (0) |
| 3-1 | Default | 9 | 9 | 9 | 17 | 17 | 17 | 29 | 29 | 24 | 25 | 53 | 91 |
| | "X-Ray Only" | 22 | 19 | 19 | 22 | 19 | 19 | 21 | 17 | 17 | 23 | 21 | 21 |
| 3-2 | Default | 33 | 47 | 60 | 29 | 42 | 63 | 13 | 45 | 77 | 18 | 55 | 96 |
| | "X-Ray Only" | 29 | 26 | 26 | 22 | 20 | 20 | 16 | 14 | 14 | 22 | 19 | 19 |
| 3-3 | Default | 53 | 68 | 100 | 60 | 60 | 56 | 34 | 96 | 159 | 10 | 94 | 186 |
| | "X-Ray Only" | 58 | 65 | 66 | 42 | 47 | 48 | 62 | 69 | 70 | 37 | 39 | 39 |
| 3-4 | Default | 22 | 52 | 103 | 28 | 28 | 25 | 25 | 46 | 72 | 3 | 3 | 4 |
| | "X-Ray Only" | 29 | 33 | 33 | 22 | 23 | 23 | 29 | 30 | 30 | 31 | 33 | 33 |
| 3-5 | Default | 59 | 59 | 55 | 25 | 25 | 22 | 30 | 64 | 101 | M (0) | M (0) | M (0) |
| | "X-Ray Only" | 46 | 51 | 51 | 13 | 14 | 14 | 46 | 52 | 53 | 6 | 5 | 5 |
| 3-6 | Default | 35 | 117 | 191 | 63 | 63 | 59 | 60 | 79 | 132 | 68 | 82 | 113 |
| | "X-Ray Only" | 76 | 85 | 87 | 59 | 66 | 67 | 65 | 74 | 76 | 76 | 84 | 86 |
| 4-1 | Default | 30 | 52 | 94 | 2 | 2 | 3 | M (0) | M (0) | M (0) | 21 | 33 | 42 |
| | "X-Ray Only" | 32 | 34 | 34 | 25 | 26 | 26 | M (0) | M (0) | M (0) | 29 | 31 | 31 |
| 4-2 | Default | M (0) | 21 | 42 | 8 | 30 | 45 | M (0) | 28 | 59 | 15 | 24 | 36 |
| | "X-Ray Only" | 8 | 8 | 8 | 19 | 20 | 20 | 7 | 6 | 6 | 18 | 19 | 19 |
| 4-3 | Default | 23 | 75 | 145 | 29 | 38 | 51 | 40 | 46 | 72 | 31 | 54 | 77 |
| | "X-Ray Only" | 38 | 40 | 40 | 35 | 39 | 39 | 38 | 40 | 40 | 42 | 44 | 44 |

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| Airport-system# | Algorithm | Total Dose Measured on Wing Dosimeters (mrem) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location 1 (master exit) | | | Location 2 (slave exit) | | | Location 3 (slave entrance) | | | Location 4 (master entrance) | | |
| | | DDE | LDE | SDE | DDE | LDE | SDE | DDE | LDE | SDE | DDE | LDE | SDE |
| 4-4 | Default | 16 | 39 | 67 | 10 | 33 | 57 | 5 | 24 | 40 | M (0) | M (0) | M (0) |
| | "X-Ray Only" | 23 | 24 | 24 | 19 | 19 | 19 | 13 | 13 | 13 | 24 | 25 | 25 |
| 5-1 | Default | 2 | 13 | 22 | 11 | 11 | 10 | 6 | 10 | 18 | 9 | 9 | 8 |
| | "X-Ray Only" | 5 | 4 | 4 | 3 | 2 | 2 | 5 | 4 | 4 | 3 | 2 | 2 |
| 5-2 | Default | M (0) | M (0) | M (0) | 16 | 16 | 17 | M (0) | M (0) | M (0) | 9 | 9 | 10 |
| | "X-Ray Only" | 18 | 17 | 17 | 35 | 36 | 36 | 17 | 16 | 16 | 34 | 34 | 34 |
| 5-3 | Default | M (0) | M (0) | M (0) | 17 | 35 | 52 | M (0) | 13 | 37 | 15 | 53 | 96 |
| | "X-Ray Only" | 12 | 10 | 10 | 25 | 26 | 26 | M (0) | M (0) | M (0) | 26 | 27 | 27 |
| 6-1 | Default | M (0) | 85 | 204 | 41 | 67 | 100 | 4 | 104 | 202 | 49 | 59 | 81 |
| | "X-Ray Only" | 12 | 12 | 12 | 52 | 59 | 60 | 39 | 42 | 42 | 47 | 51 | 51 |
| 6-2 | Default | M (0) | M (0) | M (0) | M (0) | M (0) | M (0) | M (0) | M (0) | M (0) | M (0) | M (0) | M (0) |
| | "X-Ray Only" | M (0) | M (0) | M (0) | M (0) | M (0) | M (0) | M (0) | M (0) | M (0) | M (0) | M (0) | M (0) |
| 6-3 | Default | 26 | 46 | 61 | 7 | 41 | 76 | M (0) | M (0) | M (0) | 62 | 62 | 62 |
| | "X-Ray Only" | 31 | 33 | 33 | 18 | 21 | 22 | 17 | 17 | 17 | 11 | 14 | 14 |
| 6-4 | Default | 42 | 59 | 140 | 50 | 50 | 51 | 40 | 43 | 72 | 31 | 56 | 98 |
| | "X-Ray Only" | 25 | 28 | 28 | 31 | 34 | 35 | 31 | 35 | 35 | 39 | 45 | 47 |

**Table F.3.** Cumulative dose at system tops.

| Airport-system# | Algorithm | Total Dose Measured at System Tops (mrem) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Location 5 (master unit, center top) | | | Location 6 (slave unit, center top) | | |
| | | DDE | LDE | SDE | DDE | LDE | SDE |
| 1-1(a) | Default | -- | -- | -- | 62 | 67 | 70 |
| | "X-Ray Only" | -- | -- | -- | 64 | 70 | 70 |
| 1-1(b) | Default | 19 | 32 | 53 | 44 | 44 | 53 |
| | "X-Ray Only" | 22 | 24 | 24 | 31 | 33 | 33 |
| 1-1(c) | Default | 36 | 82 | 124 | 62 | 61 | 67 |
| | "X-Ray Only" | 59 | 66 | 67 | 52 | 57 | 58 |
| 1-2 | Default | 55 | 55 | 52 | 48 | 48 | 73 |
| | "X-Ray Only" | 35 | 37 | 37 | 38 | 41 | 41 |
| 1-3 | Default | 41 | 87 | 136 | 42 | 92 | 144 |
| | "X-Ray Only" | 62 | 69 | 70 | 69 | 78 | 81 |
| 1-4 | Default | 67 | 78 | 118 | 63 | 78 | 117 |
| | "X-Ray Only" | 69 | 76 | 78 | 68 | 75 | 76 |
| 1-5 | Default | 83 | 82 | 77 | 67 | 73 | 80 |
| | "X-Ray Only" | 73 | 79 | 80 | 72 | 78 | 79 |
| 2-1(a) | Default | 5 | 14 | 23 | 5 | 14 | 23 |
| | "X-Ray Only" | 7 | 7 | 7 | 8 | 7 | 7 |
| 2-1(b) | Default | 18 | 38 | 67 | 16 | 40 | 66 |
| | "X-Ray Only" | 24 | 28 | 28 | 24 | 28 | 28 |
| 2-2 | Default | 1 | 11 | 21 | M (0) | 2 | 3 |
| | "X-Ray Only" | 4 | 4 | 4 | 1 | M (0) | M (0) |

| Airport-system# | Algorithm | Total Dose Measured at System Tops (mrem) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Location 5 (master unit, center top) | | | Location 6 (slave unit, center top) | | |
| | | DDE | LDE | SDE | DDE | LDE | SDE |
| 2-3 | Default | M (0) | 1 | 3 | M (0) | M (0) | M (0) |
| | "X-Ray Only" | M (0) | 1 | 1 | M (0) | 1 | 1 |
| 3-1 | Default | 48 | 69 | 104 | 16 | 16 | 16 |
| | "X-Ray Only" | 43 | 43 | 43 | 28 | 26 | 26 |
| 3-2 | Default | 23 | 76 | 122 | 30 | 57 | 93 |
| | "X-Ray Only" | 34 | 32 | 32 | 28 | 27 | 27 |
| 3-3 | Default | 75 | 91 | 155 | 86 | 118 | 149 |
| | "X-Ray Only" | 72 | 80 | 82 | 108 | 119 | 121 |
| 3-4 | Default | 50 | 52 | 67 | 24 | 60 | 96 |
| | "X-Ray Only" | 48 | 52 | 52 | 37 | 40 | 40 |
| 3-5 | Default | 42 | 103 | 163 | 34 | 90 | 136 |
| | "X-Ray Only" | 70 | 78 | 79 | 62 | 69 | 70 |
| 3-6 | Default | 74 | 177 | 291 | 100 | 130 | 179 |
| | "X-Ray Only" | 121 | 134 | 137 | 126 | 147 | 155 |
| 4-1 | Default | 48 | 52 | 82 | 27 | 53 | 69 |
| | "X-Ray Only" | 47 | 52 | 53 | 42 | 45 | 45 |
| 4-2 | Default | 15 | 52 | 84 | 16 | 41 | 63 |
| | "X-Ray Only" | 30 | 29 | 29 | 30 | 32 | 32 |
| 4-3 | Default | 33 | 95 | 162 | 37 | 66 | 101 |
| | "X-Ray Only" | 61 | 66 | 67 | 52 | 57 | 58 |

| Airport-system# | Algorithm | Total Dose Measured at System Tops (mrem) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Location 5 (master unit, center top) | | | Location 6 (slave unit, center top) | | |
| | | DDE | LDE | SDE | DDE | LDE | SDE |
| 4-4 | Default | 35 | 93 | 134 | 5 | 5 | 6 |
| | "X-Ray Only" | 68 | 73 | 74 | 29 | 29 | 29 |
| 5-1 | Default | 7 | 16 | 28 | 6 | 14 | 21 |
| | "X-Ray Only" | 8 | 7 | 7 | 7 | 6 | 6 |
| 5-2 | Default | 39 | 53 | 76 | 49 | 49 | 46 |
| | "X-Ray Only" | 43 | 46 | 46 | 41 | 44 | 44 |
| 5-3 | Default | 36 | 72 | 113 | 44 | 44 | 42 |
| | "X-Ray Only" | 47 | 49 | 49 | 38 | 40 | 40 |
| 6-1 | Default | 27 | 108 | 193 | 42 | 92 | 137 |
| | "X-Ray Only" | 57 | 63 | 64 | 61 | 67 | 67 |
| 6-2 | Default | M (0) | 1 | 3 | M (0) | 4 | 9 |
| | "X-Ray Only" | M (0) | M (0) | M (0) | M (0) | M (0) | M (0) |
| 6-3 | Default | 41 | 84 | 130 | 37 | 44 | 71 |
| | "X-Ray Only" | 54 | 58 | 58 | 32 | 36 | 36 |
| 6-4 | Default | 64 | 78 | 99 | 38 | 53 | 70 |
| | "X-Ray Only" | 70 | 78 | 79 | 44 | 48 | 49 |

**Table F.4.** Dose per screening at system "wings."

| Airport-system# | Algorithm | Dose per Screening (mrem) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location 1 (master exit) | | | Location 2 (slave exit) | | | Location 3 (slave entrance) | | | Location 4 (master entrance) | | |
| | | DDE | LDE | SDE | DDE | LDE | SDE | DDE | LDE | SDE | DDE | LDE | SDE |
| 1-1(a) | Default | 2.48E-05 | 2.48E-05 | 4.95E-05 | 6.19E-04 | 6.68E-04 | 6.93E-04 | 1.36E-04 | 1.36E-04 | 1.61E-04 | NA | NA | NA |
| | "X-Ray Only" | 7.43E-05 | 4.95E-05 | 4.95E-05 | 6.44E-04 | 6.93E-04 | 6.93E-04 | 1.73E-04 | 1.61E-04 | 1.61E-04 | NA | NA | NA |
| 1-1(b) | Default | 0.00E+00 | 0.00E+00 | 1.55E-05 | 5.58E-04 | 5.58E-04 | 6.98E-04 | 3.41E-04 | 4.50E-04 | 6.67E-04 | 1.40E-04 | 1.40E-04 | 1.24E-04 |
| | "X-Ray Only" | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.19E-04 | 4.34E-04 | 4.34E-04 | 3.57E-04 | 3.72E-04 | 3.72E-04 | 1.40E-04 | 1.24E-04 | 1.24E-04 |
| 1-1(c) | Default | 1.01E-04 | 1.07E-03 | 2.04E-03 | 3.26E-04 | 7.53E-04 | 1.44E-03 | 5.28E-04 | 5.17E-04 | 7.30E-04 | 5.50E-04 | 6.40E-04 | 9.89E-04 |
| | "X-Ray Only" | 4.49E-04 | 4.72E-04 | 4.72E-04 | 4.04E-04 | 4.38E-04 | 4.38E-04 | 4.27E-04 | 4.72E-04 | 4.72E-04 | 4.83E-04 | 5.06E-04 | 5.06E-04 |
| 1-2 | Default | 4.79E-04 | 5.66E-04 | 8.85E-04 | 4.06E-04 | 5.37E-04 | 7.98E-04 | 5.80E-04 | 5.80E-04 | 5.51E-04 | 3.63E-04 | 5.66E-04 | 8.70E-04 |
| | "X-Ray Only" | 4.06E-04 | 4.21E-04 | 4.21E-04 | 4.21E-04 | 4.35E-04 | 4.35E-04 | 3.77E-04 | 3.92E-04 | 3.92E-04 | 4.21E-04 | 4.35E-04 | 4.35E-04 |
| 1-3 | Default | 3.14E-05 | 2.09E-05 | 2.09E-05 | 5.03E-04 | 7.23E-04 | 1.09E-03 | 1.99E-04 | 8.48E-04 | 1.71E-03 | 8.38E-05 | 1.57E-04 | 1.57E-04 |
| | "X-Ray Only" | 3.04E-04 | 3.04E-04 | 3.04E-04 | 5.34E-04 | 5.76E-04 | 5.76E-04 | 4.19E-04 | 4.61E-04 | 4.71E-04 | 9.43E-05 | 8.38E-05 | 8.38E-05 |
| 1-4 | Default | 2.66E-05 | 1.51E-04 | 3.10E-04 | 4.08E-04 | 5.40E-04 | 6.73E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 5.58E-04 | 5.49E-04 | 6.82E-04 |
| | "X-Ray Only" | 4.43E-05 | 2.66E-05 | 2.66E-05 | 4.78E-04 | 5.14E-04 | 5.14E-04 | 6.20E-05 | 4.43E-05 | 4.43E-05 | 4.61E-04 | 5.05E-04 | 5.05E-04 |
| 1-5 | Default | 4.00E-05 | 3.00E-05 | 2.00E-05 | 3.70E-04 | 4.20E-04 | 6.50E-04 | 8.00E-05 | 2.90E-04 | 5.90E-04 | 5.00E-04 | 5.40E-04 | 8.40E-04 |
| | "X-Ray Only" | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.60E-04 | 4.00E-04 | 4.00E-04 | 1.00E-04 | 8.00E-05 | 8.00E-05 | 4.50E-04 | 4.80E-04 | 4.80E-04 |
| 2-1(a) | Default | 0.00E+00 | 3.68E-04 | 1.38E-03 | 1.84E-04 | 1.84E-04 | 4.14E-04 | 0.00E+00 | 5.52E-04 | 1.29E-03 | 1.38E-04 | 3.22E-04 | 6.90E-04 |
| | "X-Ray Only" | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.60E-05 | 4.60E-05 | 4.60E-05 | 1.38E-04 | 9.20E-05 | 9.20E-05 | 1.38E-04 | 1.38E-04 | 1.38E-04 |
| 2-1(b) | Default | 3.41E-04 | 3.41E-04 | 2.81E-04 | 2.00E-04 | 2.00E-04 | 3.21E-04 | 1.80E-04 | 4.81E-04 | 8.82E-04 | 2.60E-04 | 3.61E-04 | 5.21E-04 |
| | "X-Ray Only" | 1.20E-04 | 1.80E-04 | 1.80E-04 | 1.40E-04 | 2.00E-04 | 2.00E-04 | 2.40E-04 | 2.81E-04 | 2.81E-04 | 2.81E-04 | 3.41E-04 | 3.41E-04 |
| 2-2 | Default | 0.00E+00 | 5.64E-04 | 1.32E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.76E-04 | 3.76E-04 | 1.88E-04 |
| | "X-Ray Only" | 1.88E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.88E-04 | 0.00E+00 | 0.00E+00 |

Radn Prot Consult No. 26-MF-0E7K-11, Rapiscan Secure 1000 SP Dosimetry Study, TSA, Arlington, VA, 21 Apr 10 - 17 Aug 11

| Airport-system# | Algorithm | Dose per Screening (mrem) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location 1 (master exit) | | | Location 2 (slave exit) | | | Location 3 (slave entrance) | | | Location 4 (master entrance) | | |
| | | DDE | LDE | SDE | DDE | LDE | SDE | DDE | LDE | SDE | DDE | LDE | SDE |
| 2-3 | Default | 0.00E+00 | 1.58E-04 | 6.32E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.58E-04 | 7.90E-04 | 0.00E+00 | 0.00E+00 | 1.58E-04 |
| | "X-Ray Only" | 0.00E+00 | 1.58E-04 | 1.58E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.58E-04 | 1.58E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 3-1 | Default | 1.26E-04 | 1.26E-04 | 1.26E-04 | 2.38E-04 | 2.38E-04 | 2.38E-04 | 4.06E-04 | 4.06E-04 | 3.36E-04 | 3.50E-04 | 7.41E-04 | 1.27E-03 |
| | "X-Ray Only" | 3.08E-04 | 2.66E-04 | 2.66E-04 | 3.08E-04 | 2.66E-04 | 2.66E-04 | 2.94E-04 | 2.38E-04 | 2.38E-04 | 3.22E-04 | 2.94E-04 | 2.94E-04 |
| 3-2 | Default | 4.61E-04 | 6.56E-04 | 8.37E-04 | 4.05E-04 | 5.86E-04 | 8.79E-04 | 1.81E-04 | 6.28E-04 | 1.07E-03 | 2.51E-04 | 7.68E-04 | 1.34E-03 |
| | "X-Ray Only" | 4.05E-04 | 3.63E-04 | 3.63E-04 | 3.07E-04 | 2.79E-04 | 2.79E-04 | 2.23E-04 | 1.95E-04 | 1.95E-04 | 3.07E-04 | 2.65E-04 | 2.65E-04 |
| 3-3 | Default | 4.01E-04 | 5.14E-04 | 7.56E-04 | 4.54E-04 | 4.54E-04 | 4.23E-04 | 2.57E-04 | 7.26E-04 | 1.20E-03 | 7.56E-05 | 7.11E-04 | 1.41E-03 |
| | "X-Ray Only" | 4.38E-04 | 4.91E-04 | 4.99E-04 | 3.18E-04 | 3.55E-04 | 3.63E-04 | 4.69E-04 | 5.22E-04 | 5.29E-04 | 2.80E-04 | 2.95E-04 | 2.95E-04 |
| 3-4 | Default | 2.93E-04 | 6.93E-04 | 1.37E-03 | 3.73E-04 | 3.73E-04 | 3.33E-04 | 3.33E-04 | 6.13E-04 | 9.59E-04 | 4.00E-05 | 4.00E-05 | 5.33E-05 |
| | "X-Ray Only" | 3.86E-04 | 4.40E-04 | 4.40E-04 | 2.93E-04 | 3.06E-04 | 3.06E-04 | 3.86E-04 | 4.00E-04 | 4.00E-04 | 4.13E-04 | 4.40E-04 | 4.40E-04 |
| 3-5 | Default | 5.80E-04 | 5.80E-04 | 5.41E-04 | 2.46E-04 | 2.46E-04 | 2.16E-04 | 2.95E-04 | 6.30E-04 | 9.94E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | "X-Ray Only" | 4.53E-04 | 5.02E-04 | 5.02E-04 | 1.28E-04 | 1.38E-04 | 1.38E-04 | 4.53E-04 | 5.12E-04 | 5.21E-04 | 5.90E-05 | 4.92E-05 | 4.92E-05 |
| 3-6 | Default | 2.53E-04 | 8.45E-04 | 1.38E-03 | 4.55E-04 | 4.55E-04 | 4.26E-04 | 4.34E-04 | 5.71E-04 | 9.54E-04 | 4.91E-04 | 5.93E-04 | 8.17E-04 |
| | "X-Ray Only" | 5.49E-04 | 6.14E-04 | 6.29E-04 | 4.26E-04 | 4.77E-04 | 4.84E-04 | 4.70E-04 | 5.35E-04 | 5.49E-04 | 5.49E-04 | 6.07E-04 | 6.21E-04 |
| 4-1 | Default | 4.70E-04 | 8.14E-04 | 1.47E-03 | 3.13E-05 | 3.13E-05 | 4.70E-05 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.29E-04 | 5.17E-04 | 6.58E-04 |
| | "X-Ray Only" | 5.01E-04 | 5.32E-04 | 5.32E-04 | 3.91E-04 | 4.07E-04 | 4.07E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.54E-04 | 4.85E-04 | 4.85E-04 |
| 4-2 | Default | 0.00E+00 | 3.94E-04 | 7.88E-04 | 1.50E-04 | 5.63E-04 | 8.44E-04 | 0.00E+00 | 5.25E-04 | 1.11E-03 | 2.81E-04 | 4.50E-04 | 6.75E-04 |
| | "X-Ray Only" | 1.50E-04 | 1.50E-04 | 1.50E-04 | 3.57E-04 | 3.75E-04 | 3.75E-04 | 1.31E-04 | 1.13E-04 | 1.13E-04 | 3.38E-04 | 3.57E-04 | 3.57E-04 |
| 4-3 | Default | 3.59E-04 | 1.17E-03 | 2.26E-03 | 4.52E-04 | 5.93E-04 | 7.95E-04 | 6.24E-04 | 7.17E-04 | 1.12E-03 | 4.83E-04 | 8.42E-04 | 1.20E-03 |
| | "X-Ray Only" | 5.93E-04 | 6.24E-04 | 6.24E-04 | 5.46E-04 | 6.08E-04 | 6.08E-04 | 5.93E-04 | 6.24E-04 | 6.24E-04 | 6.55E-04 | 6.86E-04 | 6.86E-04 |

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| Airport-system# | Algorithm | Dose per Screening (mrem) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location 1 (master exit) | | | Location 2 (slave exit) | | | Location 3 (slave entrance) | | | Location 4 (master entrance) | | |
| | | DDE | LDE | SDE | DDE | LDE | SDE | DDE | LDE | SDE | DDE | LDE | SDE |
| 4-4 | Default | 2.72E-04 | 6.62E-04 | 1.14E-03 | 1.70E-04 | 5.60E-04 | 9.68E-04 | 8.49E-05 | 4.08E-04 | 6.79E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | "X-Ray Only" | 3.91E-04 | 4.08E-04 | 4.08E-04 | 3.23E-04 | 3.23E-04 | 3.23E-04 | 2.21E-04 | 2.21E-04 | 2.21E-04 | 4.08E-04 | 4.25E-04 | 4.25E-04 |
| 5-1 | Default | 7.26E-05 | 4.72E-04 | 7.99E-04 | 3.99E-04 | 3.99E-04 | 3.63E-04 | 2.18E-04 | 3.63E-04 | 6.53E-04 | 3.27E-04 | 3.27E-04 | 2.90E-04 |
| | "X-Ray Only" | 1.82E-04 | 1.45E-04 | 1.45E-04 | 1.09E-04 | 7.26E-05 | 7.26E-05 | 1.82E-04 | 1.45E-04 | 1.45E-04 | 1.09E-04 | 7.26E-05 | 7.26E-05 |
| 5-2 | Default | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.22E-04 | 2.22E-04 | 2.36E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.25E-04 | 1.25E-04 | 1.39E-04 |
| | "X-Ray Only" | 2.50E-04 | 2.36E-04 | 2.36E-04 | 4.85E-04 | 4.99E-04 | 4.99E-04 | 2.36E-04 | 2.22E-04 | 2.22E-04 | 4.72E-04 | 4.72E-04 | 4.72E-04 |
| 5-3 | Default | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.35E-04 | 4.84E-04 | 7.19E-04 | 0.00E+00 | 1.80E-04 | 5.12E-04 | 2.07E-04 | 7.33E-04 | 1.33E-03 |
| | "X-Ray Only" | 1.66E-04 | 1.38E-04 | 1.38E-04 | 3.46E-04 | 3.60E-04 | 3.60E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.60E-04 | 3.73E-04 | 3.73E-04 |
| 6-1 | Default | 0.00E+00 | 7.04E-04 | 1.69E-03 | 3.39E-04 | 5.55E-04 | 8.28E-04 | 3.31E-05 | 8.61E-04 | 1.67E-03 | 4.06E-04 | 4.88E-04 | 6.70E-04 |
| | "X-Ray Only" | 9.93E-05 | 9.93E-05 | 9.93E-05 | 4.30E-04 | 4.88E-04 | 4.97E-04 | 3.23E-04 | 3.48E-04 | 3.48E-04 | 3.89E-04 | 4.22E-04 | 4.22E-04 |
| 6-2 | Default | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | "X-Ray Only" | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 6-3 | Default | 3.33E-04 | 5.89E-04 | 7.81E-04 | 8.96E-05 | 5.25E-04 | 9.73E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 7.94E-04 | 7.94E-04 | 7.94E-04 |
| | "X-Ray Only" | 3.97E-04 | 4.23E-04 | 4.23E-04 | 2.30E-04 | 2.69E-04 | 2.82E-04 | 2.18E-04 | 2.18E-04 | 2.18E-04 | 1.41E-04 | 1.79E-04 | 1.79E-04 |
| 6-4 | Default | 4.18E-04 | 5.87E-04 | 1.39E-03 | 4.97E-04 | 4.97E-04 | 5.07E-04 | 3.98E-04 | 4.28E-04 | 7.16E-04 | 3.08E-04 | 5.57E-04 | 9.74E-04 |
| | "X-Ray Only" | 2.49E-04 | 2.78E-04 | 2.78E-04 | 3.08E-04 | 3.38E-04 | 3.48E-04 | 3.08E-04 | 3.48E-04 | 3.48E-04 | 3.88E-04 | 4.47E-04 | 4.67E-04 |

**Table F.5.** Dose per screening at system tops.

| Airport-system# | Algorithm | Dose per Screening (mrem) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Location 5 (master unit, center top) | | | Location 6 (slave unit, center top) | | |
| | | DDE | LDE | SDE | DDE | LDE | SDE |
| 1-1(a) | Default | NA | NA | NA | 7.67E-04 | 8.29E-04 | 8.66E-04 |
| | "X-Ray Only" | NA | NA | NA | 7.92E-04 | 8.66E-04 | 8.66E-04 |
| 1-1(b) | Default | 2.95E-04 | 4.96E-04 | 8.22E-04 | 6.82E-04 | 6.82E-04 | 8.22E-04 |
| | "X-Ray Only" | 3.41E-04 | 3.72E-04 | 3.72E-04 | 4.81E-04 | 5.12E-04 | 5.12E-04 |
| 1-1(c) | Default | 4.04E-04 | 9.21E-04 | 1.39E-03 | 6.96E-04 | 6.85E-04 | 7.53E-04 |
| | "X-Ray Only" | 6.63E-04 | 7.41E-04 | 7.53E-04 | 5.84E-04 | 6.40E-04 | 6.52E-04 |
| 1-2 | Default | 7.98E-04 | 7.98E-04 | 7.54E-04 | 6.96E-04 | 6.96E-04 | 1.06E-03 |
| | "X-Ray Only" | 5.08E-04 | 5.37E-04 | 5.37E-04 | 5.51E-04 | 5.95E-04 | 5.95E-04 |
| 1-3 | Default | 4.29E-04 | 9.11E-04 | 1.42E-03 | 4.40E-04 | 9.64E-04 | 1.51E-03 |
| | "X-Ray Only" | 6.49E-04 | 7.23E-04 | 7.33E-04 | 7.23E-04 | 8.17E-04 | 8.48E-04 |
| 1-4 | Default | 5.94E-04 | 6.91E-04 | 1.05E-03 | 5.58E-04 | 6.91E-04 | 1.04E-03 |
| | "X-Ray Only" | 6.11E-04 | 6.73E-04 | 6.91E-04 | 6.02E-04 | 6.64E-04 | 6.73E-04 |
| 1-5 | Default | 8.30E-04 | 8.20E-04 | 7.70E-04 | 6.70E-04 | 7.30E-04 | 8.00E-04 |
| | "X-Ray Only" | 7.30E-04 | 7.90E-04 | 8.00E-04 | 7.20E-04 | 7.80E-04 | 7.90E-04 |
| 2-1(a) | Default | 2.30E-04 | 6.44E-04 | 1.06E-03 | 2.30E-04 | 6.44E-04 | 1.06E-03 |
| | "X-Ray Only" | 3.22E-04 | 3.22E-04 | 3.22E-04 | 3.68E-04 | 3.22E-04 | 3.22E-04 |
| 2-1(b) | Default | 3.61E-04 | 7.61E-04 | 1.34E-03 | 3.21E-04 | 8.02E-04 | 1.32E-03 |
| | "X-Ray Only" | 4.81E-04 | 5.61E-04 | 5.61E-04 | 4.81E-04 | 5.61E-04 | 5.61E-04 |
| 2-2 | Default | 1.88E-04 | 2.07E-03 | 3.95E-03 | 0.00E+00 | 3.76E-04 | 5.64E-04 |
| | "X-Ray Only" | 7.52E-04 | 7.52E-04 | 7.52E-04 | 1.88E-04 | 0.00E+00 | 0.00E+00 |

| Airport-system# | Algorithm | Dose per Screening (mrem) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Location 5 (master unit, center top) | | | Location 6 (slave unit, center top) | | |
| | | DDE | LDE | SDE | DDE | LDE | SDE |
| 2-3 | Default | 0.00E+00 | 1.58E-04 | 4.74E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | "X-Ray Only" | 0.00E+00 | 1.58E-04 | 1.58E-04 | 0.00E+00 | 1.58E-04 | 1.58E-04 |
| 3-1 | Default | 6.72E-04 | 9.65E-04 | 1.46E-03 | 2.24E-04 | 2.24E-04 | 2.24E-04 |
| | "X-Ray Only" | 6.02E-04 | 6.02E-04 | 6.02E-04 | 3.92E-04 | 3.64E-04 | 3.64E-04 |
| 3-2 | Default | 3.21E-04 | 1.06E-03 | 1.70E-03 | 4.19E-04 | 7.96E-04 | 1.30E-03 |
| | "X-Ray Only" | 4.75E-04 | 4.47E-04 | 4.47E-04 | 3.91E-04 | 3.77E-04 | 3.77E-04 |
| 3-3 | Default | 5.67E-04 | 6.88E-04 | 1.17E-03 | 6.50E-04 | 8.92E-04 | 1.13E-03 |
| | "X-Ray Only" | 5.44E-04 | 6.05E-04 | 6.20E-04 | 8.16E-04 | 9.00E-04 | 9.15E-04 |
| 3-4 | Default | 6.66E-04 | 6.93E-04 | 8.93E-04 | 3.20E-04 | 8.00E-04 | 1.28E-03 |
| | "X-Ray Only" | 6.40E-04 | 6.93E-04 | 6.93E-04 | 4.93E-04 | 5.33E-04 | 5.33E-04 |
| 3-5 | Default | 4.13E-04 | 1.01E-03 | 1.60E-03 | 3.35E-04 | 8.85E-04 | 1.34E-03 |
| | "X-Ray Only" | 6.89E-04 | 7.67E-04 | 7.77E-04 | 6.10E-04 | 6.79E-04 | 6.89E-04 |
| 3-6 | Default | 5.35E-04 | 1.28E-03 | 2.10E-03 | 7.23E-04 | 9.39E-04 | 1.29E-03 |
| | "X-Ray Only" | 8.74E-04 | 9.68E-04 | 9.90E-04 | 9.10E-04 | 1.06E-03 | 1.12E-03 |
| 4-1 | Default | 7.52E-04 | 8.14E-04 | 1.28E-03 | 4.23E-04 | 8.30E-04 | 1.08E-03 |
| | "X-Ray Only" | 7.36E-04 | 8.14E-04 | 8.30E-04 | 6.58E-04 | 7.05E-04 | 7.05E-04 |
| 4-2 | Default | 2.81E-04 | 9.76E-04 | 1.58E-03 | 3.00E-04 | 7.69E-04 | 1.18E-03 |
| | "X-Ray Only" | 5.63E-04 | 5.44E-04 | 5.44E-04 | 5.63E-04 | 6.00E-04 | 6.00E-04 |
| 4-3 | Default | 5.15E-04 | 1.48E-03 | 2.53E-03 | 5.77E-04 | 1.03E-03 | 1.57E-03 |
| | "X-Ray Only" | 9.51E-04 | 1.03E-03 | 1.04E-03 | 8.11E-04 | 8.89E-04 | 9.04E-04 |

| Airport-system# | Algorithm | Dose per Screening (mrem) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Location 5 (master unit, center top) | | | Location 6 (slave unit, center top) | | |
| | | DDE | LDE | SDE | DDE | LDE | SDE |
| 4-4 | Default | 5.94E-04 | 1.58E-03 | 2.28E-03 | 8.49E-05 | 8.49E-05 | 1.02E-04 |
| | "X-Ray Only" | 1.15E-03 | 1.24E-03 | 1.26E-03 | 4.93E-04 | 4.93E-04 | 4.93E-04 |
| 5-1 | Default | 2.54E-04 | 5.81E-04 | 1.02E-03 | 2.18E-04 | 5.08E-04 | 7.62E-04 |
| | "X-Ray Only" | 2.90E-04 | 2.54E-04 | 2.54E-04 | 2.54E-04 | 2.18E-04 | 2.18E-04 |
| 5-2 | Default | 5.41E-04 | 7.35E-04 | 1.05E-03 | 6.80E-04 | 6.80E-04 | 6.38E-04 |
| | "X-Ray Only" | 5.96E-04 | 6.38E-04 | 6.38E-04 | 5.69E-04 | 6.10E-04 | 6.10E-04 |
| 5-3 | Default | 4.98E-04 | 9.96E-04 | 1.56E-03 | 6.09E-04 | 6.09E-04 | 5.81E-04 |
| | "X-Ray Only" | 6.50E-04 | 6.78E-04 | 6.78E-04 | 5.26E-04 | 5.53E-04 | 5.53E-04 |
| 6-1 | Default | 2.23E-04 | 8.94E-04 | 1.60E-03 | 3.48E-04 | 7.61E-04 | 1.13E-03 |
| | "X-Ray Only" | 4.72E-04 | 5.21E-04 | 5.30E-04 | 5.05E-04 | 5.55E-04 | 5.55E-04 |
| 6-2 | Default | 0.00E+00 | 8.26E-05 | 2.48E-04 | 0.00E+00 | 3.30E-04 | 7.43E-04 |
| | "X-Ray Only" | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 6-3 | Default | 5.25E-04 | 1.08E-03 | 1.66E-03 | 4.74E-04 | 5.63E-04 | 9.09E-04 |
| | "X-Ray Only" | 6.91E-04 | 7.43E-04 | 7.43E-04 | 4.10E-04 | 4.61E-04 | 4.61E-04 |
| 6-4 | Default | 6.36E-04 | 7.76E-04 | 9.84E-04 | 3.78E-04 | 5.27E-04 | 6.96E-04 |
| | "X-Ray Only" | 6.96E-04 | 7.76E-04 | 7.85E-04 | 4.37E-04 | 4.77E-04 | 4.87E-04 |

**Table F.6.** Ratio of airport to TSIF system "wing" results.

| Airport-system# | Algorithm | Ratio (Airport/TSIF) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location 1 (master exit) | | | Location 2 (slave exit) | | | Location 3 (slave entrance) | | | Location 4 (master entrance) | | |
| | | DDE | LDE | SDE | DDE | LDE | SDE | DDE | LDE | SDE | DDE | LDE | SDE |
| 1-1(a) | Default | 0.04 | 0.02 | 0.02 | **1.09** | 0.45 | 0.29 | 0.24 | 0.09 | 0.07 | NA | NA | NA |
| | "X-Ray Only" | 0.12 | 0.07 | 0.07 | **1.05** | 0.99 | 0.94 | 0.28 | 0.23 | 0.22 | NA | NA | NA |
| 1-1(b) | Default | 0.00 | 0.00 | 0.01 | 0.98 | 0.38 | 0.29 | 0.60 | 0.31 | 0.28 | 0.25 | 0.09 | 0.05 |
| | "X-Ray Only" | 0.00 | 0.00 | 0.00 | 0.68 | 0.62 | 0.59 | 0.58 | 0.53 | 0.50 | 0.23 | 0.18 | 0.17 |
| 1-1(c) | Default | 0.18 | 0.73 | 0.85 | 0.57 | 0.51 | 0.60 | 0.93 | 0.35 | 0.30 | 0.97 | 0.44 | 0.41 |
| | "X-Ray Only" | 0.73 | 0.68 | 0.64 | 0.66 | 0.63 | 0.59 | 0.70 | 0.68 | 0.64 | 0.79 | 0.72 | 0.68 |
| 1-2 | Default | 0.84 | 0.38 | 0.37 | 0.71 | 0.36 | 0.33 | **1.02** | 0.39 | 0.23 | 0.64 | 0.38 | 0.36 |
| | "X-Ray Only" | 0.66 | 0.60 | 0.57 | 0.69 | 0.62 | 0.59 | 0.62 | 0.56 | 0.53 | 0.69 | 0.62 | 0.59 |
| 1-3 | Default | 0.06 | 0.01 | 0.01 | 0.88 | 0.49 | 0.45 | 0.35 | 0.58 | 0.71 | 0.15 | 0.11 | 0.07 |
| | "X-Ray Only" | 0.50 | 0.44 | 0.41 | 0.87 | 0.83 | 0.78 | 0.68 | 0.66 | 0.64 | 0.15 | 0.12 | 0.11 |
| 1-4 | Default | 0.05 | 0.10 | 0.13 | 0.72 | 0.37 | 0.28 | 0.00 | 0.00 | 0.00 | 0.98 | 0.37 | 0.28 |
| | "X-Ray Only" | 0.07 | 0.04 | 0.04 | 0.78 | 0.74 | 0.69 | 0.10 | 0.06 | 0.06 | 0.75 | 0.72 | 0.68 |
| 1-5 | Default | 0.07 | 0.02 | 0.01 | 0.65 | 0.29 | 0.27 | 0.14 | 0.20 | 0.25 | 0.88 | 0.37 | 0.35 |
| | "X-Ray Only" | 0.00 | 0.00 | 0.00 | 0.59 | 0.57 | 0.54 | 0.16 | 0.11 | 0.11 | 0.73 | 0.69 | 0.65 |
| 2-1(a) | Default | 0.00 | 0.25 | 0.57 | 0.32 | 0.13 | 0.17 | 0.00 | 0.38 | 0.54 | 0.24 | 0.22 | 0.29 |
| | "X-Ray Only" | 0.00 | 0.00 | 0.00 | 0.08 | 0.07 | 0.06 | 0.23 | 0.13 | 0.12 | 0.23 | 0.20 | 0.19 |
| 2-1(b) | Default | 0.60 | 0.23 | 0.12 | 0.35 | 0.14 | 0.13 | 0.32 | 0.33 | 0.37 | 0.46 | 0.25 | 0.22 |
| | "X-Ray Only" | 0.20 | 0.26 | 0.24 | 0.23 | 0.29 | 0.27 | 0.39 | 0.40 | 0.38 | 0.46 | 0.49 | 0.46 |
| 2-2 | Default | 0.00 | 0.38 | 0.55 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.66 | 0.26 | 0.08 |
| | "X-Ray Only" | 0.31 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.31 | 0.00 | 0.00 |

Radn Prot Consult No. 26-MF-0E7K-11, Rapiscan Secure 1000 SP Dosimetry Study, TSA, Arlington, VA, 21 Apr 10 - 17 Aug 11

| Airport-system# | Algorithm | Ratio (Airport/TSIF) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location 1 (master exit) | | | Location 2 (slave exit) | | | Location 3 (slave entrance) | | | Location 4 (master entrance) | | |
| | | DDE | LDE | SDE | DDE | LDE | SDE | DDE | LDE | SDE | DDE | LDE | SDE |
| 2-3 | Default | 0.00 | 0.11 | 0.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.11 | 0.33 | 0.00 | 0.00 | 0.07 |
| | "X-Ray Only" | 0.00 | 0.23 | 0.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.23 | 0.21 | 0.00 | 0.00 | 0.00 |
| 3-1 | Default | 0.22 | 0.09 | 0.05 | 0.42 | 0.16 | 0.10 | 0.71 | 0.28 | 0.14 | 0.61 | 0.50 | 0.53 |
| | "X-Ray Only" | 0.50 | 0.38 | 0.36 | 0.50 | 0.38 | 0.36 | 0.48 | 0.34 | 0.32 | 0.53 | 0.42 | 0.40 |
| 3-2 | Default | 0.81 | 0.45 | 0.35 | 0.71 | 0.40 | 0.37 | 0.32 | 0.43 | 0.45 | 0.44 | 0.52 | 0.56 |
| | "X-Ray Only" | 0.66 | 0.52 | 0.49 | 0.50 | 0.40 | 0.38 | 0.36 | 0.28 | 0.26 | 0.50 | 0.38 | 0.36 |
| 3-3 | Default | 0.70 | 0.35 | 0.31 | 0.80 | 0.31 | 0.18 | 0.45 | 0.49 | 0.50 | 0.13 | 0.48 | 0.58 |
| | "X-Ray Only" | 0.72 | 0.70 | 0.67 | 0.52 | 0.51 | 0.49 | 0.77 | 0.75 | 0.71 | 0.46 | 0.42 | 0.40 |
| 3-4 | Default | 0.52 | 0.47 | 0.57 | 0.66 | 0.25 | 0.14 | 0.59 | 0.42 | 0.40 | 0.07 | 0.03 | 0.02 |
| | "X-Ray Only" | 0.63 | 0.63 | 0.59 | 0.48 | 0.44 | 0.41 | 0.63 | 0.57 | 0.54 | 0.67 | 0.63 | 0.59 |
| 3-5 | Default | **1.02** | 0.39 | 0.22 | 0.43 | 0.17 | 0.09 | 0.52 | 0.43 | 0.41 | 0.00 | 0.00 | 0.00 |
| | "X-Ray Only" | 0.74 | 0.72 | 0.68 | 0.21 | 0.20 | 0.19 | 0.74 | 0.73 | 0.70 | 0.10 | 0.07 | 0.07 |
| 3-6 | Default | 0.44 | 0.57 | 0.57 | 0.80 | 0.31 | 0.18 | 0.76 | 0.39 | 0.40 | 0.86 | 0.40 | 0.34 |
| | "X-Ray Only" | 0.90 | 0.88 | 0.85 | 0.70 | 0.68 | 0.65 | 0.77 | 0.77 | 0.74 | 0.90 | 0.87 | 0.84 |
| 4-1 | Default | 0.83 | 0.55 | 0.61 | 0.06 | 0.02 | 0.02 | 0.00 | 0.00 | 0.00 | 0.58 | 0.35 | 0.27 |
| | "X-Ray Only" | 0.82 | 0.76 | 0.72 | 0.64 | 0.58 | 0.55 | 0.00 | 0.00 | 0.00 | 0.74 | 0.70 | 0.65 |
| 4-2 | Default | 0.00 | 0.27 | 0.33 | 0.26 | 0.38 | 0.35 | 0.00 | 0.36 | 0.46 | 0.49 | 0.31 | 0.28 |
| | "X-Ray Only" | 0.25 | 0.22 | 0.20 | 0.58 | 0.54 | 0.51 | 0.21 | 0.16 | 0.15 | 0.55 | 0.51 | 0.48 |
| 4-3 | Default | 0.63 | 0.79 | 0.94 | 0.79 | 0.40 | 0.33 | **1.10** | 0.49 | 0.47 | 0.85 | 0.57 | 0.50 |
| | "X-Ray Only" | 0.97 | 0.89 | 0.84 | 0.89 | 0.87 | 0.82 | 0.97 | 0.89 | 0.84 | **1.07** | 0.98 | 0.93 |

Radn Prot Consult No. 26-MF-0E7K-11, Rapiscan Secure 1000 SP Dosimetry Study, TSA, Arlington, VA, 21 Apr 10 - 17 Aug 11

| Airport-system# | Algorithm | Ratio (Airport/TSIF) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Location 1 (master exit) | | | Location 2 (slave exit) | | | Location 3 (slave entrance) | | | Location 4 (master entrance) | | |
| | | DDE | LDE | SDE | DDE | LDE | SDE | DDE | LDE | SDE | DDE | LDE | SDE |
| 4-4 | Default | 0.48 | 0.45 | 0.47 | 0.30 | 0.38 | 0.40 | 0.15 | 0.28 | 0.28 | 0.00 | 0.00 | 0.00 |
| | "X-Ray Only" | 0.64 | 0.58 | 0.55 | 0.53 | 0.46 | 0.44 | 0.36 | 0.32 | 0.30 | 0.67 | 0.61 | 0.57 |
| 5-1 | Default | 0.13 | 0.32 | 0.33 | 0.70 | 0.27 | 0.15 | 0.38 | 0.25 | 0.27 | 0.57 | 0.22 | 0.12 |
| | "X-Ray Only" | 0.30 | 0.21 | 0.20 | 0.18 | 0.10 | 0.10 | 0.30 | 0.21 | 0.20 | 0.18 | 0.10 | 0.10 |
| 5-2 | Default | 0.00 | 0.00 | 0.00 | 0.39 | 0.15 | 0.10 | 0.00 | 0.00 | 0.00 | 0.22 | 0.08 | 0.06 |
| | "X-Ray Only" | 0.41 | 0.34 | 0.32 | 0.79 | 0.72 | 0.67 | 0.39 | 0.32 | 0.30 | 0.77 | 0.68 | 0.64 |
| 5-3 | Default | 0.00 | 0.00 | 0.00 | 0.41 | 0.33 | 0.30 | 0.00 | 0.12 | 0.21 | 0.36 | 0.50 | 0.55 |
| | "X-Ray Only" | 0.27 | 0.20 | 0.19 | 0.56 | 0.52 | 0.49 | 0.00 | 0.00 | 0.00 | 0.59 | 0.53 | 0.50 |
| 6-1 | Default | 0.00 | 0.48 | 0.70 | 0.60 | 0.38 | 0.34 | 0.06 | 0.58 | 0.69 | 0.71 | 0.33 | 0.28 |
| | "X-Ray Only" | 0.16 | 0.14 | 0.13 | 0.70 | 0.70 | 0.67 | 0.53 | 0.50 | 0.47 | 0.64 | 0.60 | 0.57 |
| 6-2 | Default | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | "X-Ray Only" | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6-3 | Default | 0.58 | 0.40 | 0.32 | 0.16 | 0.36 | 0.40 | 0.00 | 0.00 | 0.00 | **1.39** | 0.54 | 0.33 |
| | "X-Ray Only" | 0.65 | 0.61 | 0.57 | 0.38 | 0.39 | 0.38 | 0.36 | 0.31 | 0.29 | 0.23 | 0.26 | 0.24 |
| 6-4 | Default | 0.73 | 0.40 | 0.58 | 0.87 | 0.34 | 0.21 | 0.70 | 0.29 | 0.30 | 0.54 | 0.38 | 0.41 |
| | "X-Ray Only" | 0.41 | 0.40 | 0.38 | 0.50 | 0.48 | 0.47 | 0.50 | 0.50 | 0.47 | 0.63 | 0.64 | 0.63 |

**Table F.7**. Ratio of airport to TSIF system top results.

| Airport-system# | Algorithm | Ratio (Airport/TSIF) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Location 5 (master unit, center top) | | | Location 6 (slave unit, center top) | | |
| | | DDE | LDE | SDE | DDE | LDE | SDE |
| 1-1(a) | Default | NA | NA | NA | 0.68 | 0.25 | 0.14 |
| | "X-Ray Only" | NA | NA | NA | 0.72 | 0.68 | 0.65 |
| 1-1(b) | Default | 0.26 | 0.15 | 0.14 | 0.61 | 0.21 | 0.14 |
| | "X-Ray Only" | 0.31 | 0.29 | 0.28 | 0.43 | 0.40 | 0.38 |
| 1-1(c) | Default | 0.36 | 0.28 | 0.23 | 0.62 | 0.21 | 0.13 |
| | "X-Ray Only" | 0.60 | 0.59 | 0.56 | 0.53 | 0.51 | 0.49 |
| 1-2 | Default | 0.71 | 0.24 | 0.13 | 0.62 | 0.21 | 0.18 |
| | "X-Ray Only" | 0.46 | 0.42 | 0.40 | 0.50 | 0.47 | 0.44 |
| 1-3 | Default | 0.38 | 0.28 | 0.24 | 0.39 | 0.30 | 0.25 |
| | "X-Ray Only" | 0.59 | 0.57 | 0.55 | 0.65 | 0.64 | 0.63 |
| 1-4 | Default | 0.53 | 0.21 | 0.17 | 0.49 | 0.21 | 0.17 |
| | "X-Ray Only" | 0.55 | 0.53 | 0.51 | 0.54 | 0.52 | 0.50 |
| 1-5 | Default | 0.74 | 0.25 | 0.13 | 0.59 | 0.22 | 0.13 |
| | "X-Ray Only" | 0.66 | 0.62 | 0.60 | 0.65 | 0.62 | 0.59 |
| 2-1(a) | Default | 0.20 | 0.20 | 0.18 | 0.20 | 0.20 | 0.18 |
| | "X-Ray Only" | 0.29 | 0.25 | 0.24 | 0.33 | 0.25 | 0.24 |
| 2-1(b) | Default | 0.32 | 0.23 | 0.22 | 0.28 | 0.25 | 0.22 |
| | "X-Ray Only" | 0.43 | 0.44 | 0.42 | 0.43 | 0.44 | 0.42 |
| 2-2 | Default | 0.17 | 0.63 | 0.66 | 0.00 | 0.12 | 0.09 |
| | "X-Ray Only" | 0.68 | 0.59 | 0.56 | 0.17 | 0.00 | 0.00 |

| Airport-system# | Algorithm | Ratio (Airport/TSIF) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Location 5 (master unit, center top) | | | Location 6 (slave unit, center top) | | |
| | | DDE | LDE | SDE | DDE | LDE | SDE |
| 2-3 | Default | 0.00 | 0.05 | 0.08 | 0.00 | 0.00 | 0.00 |
| | "X-Ray Only" | 0.00 | 0.12 | 0.12 | 0.00 | 0.12 | 0.12 |
| 3-1 | Default | 0.60 | 0.30 | 0.24 | 0.20 | 0.07 | 0.04 |
| | "X-Ray Only" | 0.54 | 0.47 | 0.45 | 0.35 | 0.29 | 0.27 |
| 3-2 | Default | 0.28 | 0.32 | 0.28 | 0.37 | 0.24 | 0.22 |
| | "X-Ray Only" | 0.43 | 0.35 | 0.33 | 0.35 | 0.30 | 0.28 |
| 3-3 | Default | 0.50 | 0.21 | 0.20 | 0.58 | 0.27 | 0.19 |
| | "X-Ray Only" | 0.49 | 0.48 | 0.46 | 0.74 | 0.71 | 0.68 |
| 3-4 | Default | 0.59 | 0.21 | 0.15 | 0.28 | 0.24 | 0.21 |
| | "X-Ray Only" | 0.58 | 0.55 | 0.52 | 0.45 | 0.42 | 0.40 |
| 3-5 | Default | 0.37 | 0.31 | 0.27 | 0.30 | 0.27 | 0.22 |
| | "X-Ray Only" | 0.62 | 0.61 | 0.58 | 0.55 | 0.54 | 0.51 |
| 3-6 | Default | 0.47 | 0.39 | 0.35 | 0.64 | 0.29 | 0.22 |
| | "X-Ray Only" | 0.79 | 0.76 | 0.74 | 0.82 | 0.84 | 0.83 |
| 4-1 | Default | 0.67 | 0.25 | 0.21 | 0.37 | 0.25 | 0.18 |
| | "X-Ray Only" | 0.67 | 0.64 | 0.62 | 0.59 | 0.56 | 0.52 |
| 4-2 | Default | 0.25 | 0.30 | 0.26 | 0.27 | 0.24 | 0.20 |
| | "X-Ray Only" | 0.51 | 0.43 | 0.41 | 0.51 | 0.47 | 0.45 |
| 4-3 | Default | 0.46 | 0.45 | 0.42 | 0.51 | 0.32 | 0.26 |
| | "X-Ray Only" | 0.86 | 0.81 | 0.78 | 0.73 | 0.70 | 0.67 |

| Airport-system# | Algorithm | Ratio (Airport/TSIF) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Location 5 (master unit, center top) | | | Location 6 (slave unit, center top) | | |
| | | DDE | LDE | SDE | DDE | LDE | SDE |
| 4-4 | Default | 0.53 | 0.48 | 0.38 | 0.08 | 0.03 | 0.02 |
| | "X-Ray Only" | **1.04** | 0.98 | 0.94 | 0.45 | 0.39 | 0.37 |
| 5-1 | Default | 0.23 | 0.18 | 0.17 | 0.19 | 0.16 | 0.13 |
| | "X-Ray Only" | 0.26 | 0.20 | 0.19 | 0.23 | 0.17 | 0.16 |
| 5-2 | Default | 0.48 | 0.23 | 0.18 | 0.60 | 0.21 | 0.11 |
| | "X-Ray Only" | 0.54 | 0.50 | 0.48 | 0.51 | 0.48 | 0.45 |
| 5-3 | Default | 0.44 | 0.30 | 0.26 | 0.54 | 0.19 | 0.10 |
| | "X-Ray Only" | 0.59 | 0.53 | 0.50 | 0.48 | 0.44 | 0.41 |
| 6-1 | Default | 0.20 | 0.27 | 0.27 | 0.31 | 0.23 | 0.19 |
| | "X-Ray Only" | 0.43 | 0.41 | 0.39 | 0.46 | 0.44 | 0.41 |
| 6-2 | Default | 0.00 | 0.03 | 0.04 | 0.00 | 0.10 | 0.12 |
| | "X-Ray Only" | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6-3 | Default | 0.47 | 0.33 | 0.28 | 0.42 | 0.17 | 0.15 |
| | "X-Ray Only" | 0.63 | 0.59 | 0.55 | 0.37 | 0.36 | 0.34 |
| 6-4 | Default | 0.56 | 0.24 | 0.16 | 0.34 | 0.16 | 0.12 |
| | "X-Ray Only" | 0.63 | 0.61 | 0.59 | 0.40 | 0.38 | 0.36 |

# APPENDIX G
# DOSIMETRY REPORTS FROM LANDAUER, INC.

1. GENERAL. The dosimetry services were provided by Landauer®, Inc. using their Luxel®+ OSL dosimeters. Landauer® is accredited for dosimetry services through the National Voluntary Laboratory Accreditation Program (http://www.nist.gov/pml/nvlap/ and http://ts.nist.gov/standards/scopes/dosim.htm).

2. OVERVIEW OF OSL DOSIMETERS. The dosimeter detector is a thin strip of crystalline aluminum oxide ($Al_2O_3$), sandwiched between four different filters (open window, plastic, aluminum and copper). All four filters are present on the front side of the dosimeter; however, only three filters (plastic, aluminum and copper) are present on the backside of the dosimeter. The dosimeter is capable of detecting photon energies from 5 keV to over 40 MeV. Doses from 1 mrem to 1000 rem can be measured. For photons the deep dose equivalent (DDE), lens dose equivalent (LDE), and shallow dose equivalent (SDE) are reported. Dose equivalents below the minimum reporting level (1 mrem) are reported as "M". Additionally, a radiation quality is reported with each result above the minimum reporting level. The radiation quality is a qualitative indicator of the suspected radiation types and energies based on the detector responses under the various filters. Additional information on the Luxel®+ dosimeter is available in Reference 7 and online (http://www.osldosimetry.com/introduction/ and http://www.osldosimetry.com/luxel/).

3. DOSIMETRY REPORTS DESCRIPTION.

Two Landauer® reports (one for the default algorithm and one for the "x-ray only" algorithm) were received for each set of dosimeters used at the TSIF and at the various airports. The Landauer® reports are included at the end of this Appendix. Reports are generated by dosimetry series and monitoring period, and ordered by participant number. The dosimetry series is a logical grouping of dosimeters within an account and the monitoring period is the timeframe the dosimeters are expected to be used. All dosimeters used for the study were area monitors – mounted in a specific physical location to measure the radiation fields. None were worn by individuals.

Most dosimeters used for the study were from the APG series; however, spare dosimeters from other series (LAX, PBI and PHL) were also used. The dosimeters used had both monthly and quarterly monitoring periods. The dosimeter series and monitoring period is included in the header information of the attached reports. The

"Pa" in the column labeled "Dosimeter" indicates the dosimeters contained a filter pack with the open window, plastic, aluminum and copper windows. The initially assigned use of the dosimeter is also noted in the column labeled "Use". Control dosimeters (CNTRL) and whole body (WHBODY) dosimeters are indicated. All dosimeters indicated as WHBODY were actually used as area monitors and not worn by an individual. The various radiation qualities reported in this studies results are defined in Table G.1.

| Radiation Quality | Description |
|---|---|
| P | x-ray or gamma ray photon |
| PL | Low energy photon, less than 40 keV |
| PM | Medium energy photon, 40 keV to 200 keV |
| B | Beta particle |
| BH | High energy beta particle, e.g. strontium, phosphorus |
| PB | Photon, beta mixture |

For each dosimeter the reports include the participant number, DDE, LDE and SDE in mrem for the monitoring period. Also reported are the quarterly, year-to-date, and lifetime doses for the participant number. For this study, only the dose equivalents for the monitoring period are applicable. If the dosimeter was a quarterly dosimeter, then the doses for the monitoring period and the quarter will be the same.

Some information has been redacted from the reports. The U.S. Army Public Health Command (USAPHC) point of contact and account number information has been redacted on all pages of all reports. Any participant number information that has been redacted is not applicable to the data set with which it had appeared on the report. No reported results for the study have been redacted. Furthermore, some Landauer report pages have been rearranged to match the order in which the data has been discussed in this report.

TSIF Study Dosimetry Report

Default Algorithm

Electronic Representation

# Radiation Dosimetry Report

LANDAUER ®
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luxel®

USAPHC
[redacted]

| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 1103530023 | 02/16/2011 | 02/04/2011 | 8 |

| Part # / ID Number | Name / Birth Date | Sex | Dos meter | Use | Rad at on / Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 12/01/2010 - 12/31/2010 | | | Quarter 4 | | | 2010 | | | | | | | |
| 00APG | CONTROL | | Pa | CNTRL | | M | M | M | | | | | | | | | | 5 | 04/2009 |
| 01511 | | | Pa | WHBODY | PL | 302 | 479 | 818 | 302 | 481 | 822 | 352 | 531 | 869 | 352 | 531 | 869 | 4 | 09/2010 |
| | | | | NOTE | | IMAGING INDICATES A STATIC EXPOSUREDOSIMETER REPROCESSED, SECOND READ AGREES WITH REPORTED DOSE | | | | | | | | | | | | | |
| 01512 | | | Pa | WHBODY | PL | 396 | 472 | 742 | 396 | 475 | 749 | 447 | 533 | 827 | 447 | 533 | 827 | 4 | 09/2010 |
| | | | | NOTE | | IMAGING INDICATES A STATIC EXPOSUREDOSIMETER REPROCESSED, SECOND READ AGREES WITH REPORTED DOSE | | | | | | | | | | | | | |
| 01513 | | | Pa | WHBODY | PL | 399 | 511 | 822 | 399 | 515 | 831 | 453 | 575 | 894 | 453 | 575 | 894 | 4 | 09/2010 |
| | | | | NOTE | | IMAGING INDICATES A STATIC EXPOSUREDOSIMETER REPROCESSED, SECOND READ AGREES WITH REPORTED DOSE | | | | | | | | | | | | | |
| 01514 | | | Pa | WHBODY | PL | 420 | 759 | 1243 | 420 | 762 | 1249 | 463 | 827 | 1314 | 463 | 827 | 1314 | 4 | 09/2010 |
| | | | | NOTE | | IMAGING INDICATES A STATIC EXPOSUREDOSIMETER REPROCESSED, SECOND READ AGREES WITH REPORTED DOSE | | | | | | | | | | | | | |
| 01515 | | | Pa | WHBODY | P | 384 | 845 | 1505 | 384 | 849 | 1513 | 412 | 877 | 1541 | 412 | 877 | 1541 | 4 | 09/2010 |
| | | | | NOTE | | IMAGING INDICATES A STATIC EXPOSUREDOSIMETER REPROCESSED, SECOND READ AGREES WITH REPORTED DOSE | | | | | | | | | | | | | |
| 01516 | | | Pa | WHBODY | P | 344 | 790 | 1443 | 344 | 795 | 1451 | 375 | 826 | 1482 | 375 | 826 | 1482 | 4 | 09/2010 |
| | | | | NOTE | | IMAGING INDICATES A STATIC EXPOSUREDOSIMETER REPROCESSED, SECOND READ AGREES WITH REPORTED DOSE | | | | | | | | | | | | | |
| 01517 | | | Pa | WHBODY | PM | 393 | 522 | 800 | 393 | 526 | 808 | 440 | 583 | 880 | 440 | 583 | 880 | 4 | 09/2010 |
| | | | | NOTE | | IMAGING INDICATES A STATIC EXPOSUREDOSIMETER REPROCESSED, SECOND READ AGREES WITH REPORTED DOSE | | | | | | | | | | | | | |
| 01518 | | | Pa | WHBODY | PM | 309 | 754 | 1289 | 309 | 758 | 1296 | 348 | 815 | 1367 | 348 | 815 | 1367 | 4 | 09/2010 |
| | | | | NOTE | | IMAGING INDICATES A STATIC EXPOSUREDOSIMETER REPROCESSED, SECOND READ AGREES WITH REPORTED DOSE | | | | | | | | | | | | | |

M: MINIMAL REPORTING SERVICE OF 1 MREM

Quality Control Release: JAS 1 PR 9697 RPT130 N1 03523



Accredited by the National Institute of Standards and Technology through NVLAP for the scope of accreditation under NVLAP Lab Code 100518-0**.

Electronic Representation

# Radiation Dosimetry Report

LANDAUER ®
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Cust Serv: (800)323-8830 Cust Serv Tech: (800)438-3241
www.landauerinc.com

luxel®

USAPHC
[redacted]

| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 1103530023 | 02/16/2011 | 02/04/2011 | 8 |

| Part # / Name / ID Number | Birth Date | Sex | Dosimeter | Use | Radiation Quality | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 12/01/2010 - 12/31/2010 | | | Quarter 4 | | | 2010 | | | | | | | |
| 01519 | | | Pa | WHBODY | P | 256 | 471 | 835 | 256 | 473 | 838 | 281 | 535 | 915 | 281 | 535 | 915 | 4 | 09/2010 |
| | | | | NOTE | | IMAGING INDICATES A STATIC EXPOSUREDOSIMETER REPROCESSED, SECOND READ AGREES WITH REPORTED DOSE | | | | | | | | | | | | | |
| 01520 | | | Pa | WHBODY | P | 1 | 12 | 23 | 1 | 13 | 26 | 49 | 61 | 71 | 49 | 61 | 71 | 4 | 09/2010 |
| 01521 | | | Pa | WHBODY | P | M | 10 | 18 | M | 12 | 23 | 15 | 33 | 47 | 15 | 33 | 47 | 4 | 09/2010 |
| 01522 | | | Pa | WHBODY | P | 4 | 16 | 26 | 5 | 17 | 29 | 21 | 37 | 50 | 21 | 37 | 50 | 4 | 09/2010 |
| 01523 | | | Pa | WHBODY | P | 6 | 65 | 148 | 6 | 65 | 148 | 20 | 87 | 175 | 20 | 87 | 175 | 4 | 09/2010 |
| 01524 | | | Pa | WHBODY | PM | 5 | 78 | 184 | 5 | 78 | 184 | 20 | 100 | 210 | 20 | 100 | 210 | 4 | 09/2010 |
| 01525 | | | Pa | WHBODY | PM | 7 | 90 | 214 | 8 | 91 | 217 | 24 | 114 | 243 | 24 | 114 | 243 | 4 | 09/2010 |
| 01526 | | | Pa | WHBODY | P | 3 | 4 | 44 | 3 | 6 | 49 | 18 | 26 | 72 | 18 | 26 | 72 | 4 | 09/2010 |
| 01527 | | | Pa | WHBODY | PM | 5 | 81 | 194 | 5 | 91 | 214 | 18 | 114 | 243 | 18 | 114 | 243 | 4 | 09/2010 |
| 01528 | | | Pa | WHBODY | P | 53 | 91 | 124 | 53 | 95 | 132 | 66 | 117 | 159 | 66 | 117 | 159 | 4 | 09/2010 |
| 01529 | | | Pa | WHBODY | P | 57 | 138 | 230 | 57 | 144 | 240 | 69 | 169 | 270 | 69 | 169 | 270 | 4 | 09/2010 |
| 01530 | | | Pa | WHBODY | PM | 5 | 137 | 224 | 5 | 139 | 230 | 20 | 163 | 260 | 20 | 163 | 260 | 4 | 09/2010 |

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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 1103530023 | 02/16/2011 | 02/04/2011 | 8 |

| Part # / Name / ID Number | Birth Date | Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 12/01/2010 - 12/31/2010 | | | Quarter 4 | | | 2010 | | | | | | | |
| 01531 | | | Pa | WHBODY | PM | 83 | 83 | 78 | 83 | 92 | 97 | 99 | 113 | 120 | 99 | 113 | 120 | 4 | 09/2010 |
| 01532 | | | Pa | WHBODY | PM | 82 | 82 | 77 | 82 | 83 | 80 | 98 | 105 | 106 | 98 | 105 | 106 | 4 | 09/2010 |
| 01533 | | | Pa | WHBODY | PM | 68 | 68 | 64 | 68 | 73 | 73 | 84 | 92 | 93 | 84 | 92 | 93 | 4 | 09/2010 |
| 01534 | | | Pa | WHBODY | PM | 58 | 58 | 54 | 58 | 64 | 66 | 72 | 87 | 95 | 72 | 87 | 95 | 4 | 09/2010 |
| 01535 | | | Pa | WHBODY | PM | 66 | 66 | 61 | 66 | 71 | 70 | 82 | 87 | 86 | 82 | 87 | 86 | 4 | 09/2010 |
| 01536 | | | Pa | WHBODY | P | 1 | 19 | 38 | 1 | 22 | 44 | 20 | 41 | 61 | 20 | 41 | 61 | 4 | 09/2010 |
| 01537 | | | Pa | WHBODY | P | 1 | 18 | 37 | 1 | 20 | 43 | 1 | 21 | 45 | 1 | 21 | 45 | 4 | 09/2010 |
| 01538 | | | Pa | WHBODY | P | 2 | 24 | 49 | 2 | 24 | 50 | 11 | 39 | 67 | 11 | 39 | 67 | 4 | 09/2010 |
| 01539 | | | Pa | WHBODY | PM | 4 | 40 | 87 | 4 | 40 | 87 | 16 | 55 | 103 | 16 | 55 | 103 | 4 | 09/2010 |
| 01540 | | | Pa | WHBODY | PM | 5 | 141 | 359 | 5 | 141 | 359 | 13 | 158 | 382 | 13 | 158 | 382 | 4 | 09/2010 |
| 01541 | | | Pa | WHBODY | PM | 3 | 40 | 86 | 3 | 40 | 86 | 12 | 55 | 101 | 12 | 55 | 101 | 4 | 09/2010 |
| 01542 | | | Pa | WHBODY | PM | 7 | 279 | 736 | 7 | 279 | 736 | 16 | 296 | 759 | 16 | 296 | 759 | 4 | 09/2010 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 12/01/2010 - 12/31/2010 | | | Quarter 4 | | | 2010 | | | | | | | |
| 01543 | | | Pa | WHBODY | PM | 14 | 230 | 581 | 14 | 231 | 585 | 23 | 246 | 602 | 23 | 246 | 602 | 4 | 09/2010 |
| 01544 | | | Pa | WHBODY | P | 35 | 38 | 45 | 35 | 39 | 50 | 44 | 54 | 67 | 44 | 54 | 67 | 4 | 09/2010 |
| 01545 | | | Pa | WHBODY | PM | 29 | 52 | 81 | 29 | 56 | 90 | 29 | 56 | 90 | 29 | 56 | 90 | 4 | 09/2010 |
| 01546 | | | Pa | WHBODY | P | 53 | 53 | 49 | 53 | 56 | 55 | 53 | 56 | 55 | 53 | 56 | 55 | 4 | 09/2010 |
| 01547 | | | Pa | WHBODY | P | 32 | 39 | 45 | 32 | 42 | 51 | 32 | 42 | 51 | 32 | 42 | 51 | 4 | 09/2010 |
| 01548 | | | Pa | WHBODY | P | 33 | 39 | 46 | 33 | 42 | 53 | 33 | 42 | 53 | 33 | 42 | 53 | 4 | 09/2010 |
| 01549 | | | Pa | WHBODY | PM | 28 | 43 | 61 | 28 | 47 | 68 | 28 | 47 | 68 | 28 | 47 | 68 | 4 | 09/2010 |
| 01550 | | | Pa | WHBODY | PM | 36 | 65 | 90 | 36 | 68 | 97 | 36 | 68 | 97 | 36 | 68 | 97 | 4 | 09/2010 |
| 01551 | | | Pa | WHBODY | PM | 29 | 39 | 50 | 29 | 43 | 59 | 29 | 43 | 59 | 29 | 43 | 59 | 4 | 09/2010 |
| 01552 | | | Pa | WHBODY | PM | 105 | 304 | 557 | 105 | 306 | 562 | 105 | 306 | 562 | 105 | 306 | 562 | 4 | 09/2010 |
| 01553 | | | Pa | WHBODY | PM | 102 | 230 | 374 | 102 | 231 | 378 | 102 | 231 | 378 | 102 | 231 | 378 | 4 | 09/2010 |
| 01554 | | | Pa | WHBODY | P | 3 | 9 | 13 | 3 | 10 | 17 | 3 | 10 | 17 | 3 | 10 | 17 | 4 | 09/2010 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Deep DDE | Eye LDE | Shallow SDE | Deep DDE | Eye LDE | Shallow SDE | Deep DDE | Eye LDE | Shallow SDE | Deep DDE | Eye LDE | Shallow SDE | | |
| For Monitoring Period: | | | | | | 12/01/2010 - 12/31/2010 | | | Quarter 4 | | | 2010 | | | | | | | |
| 01555 | | | Pa | WHBODY | P | 4 | 12 | 15 | 4 | 12 | 16 | 4 | 12 | 16 | 4 | 12 | 16 | 4 | 09/2010 |
| 01556 | | | Pa | WHBODY | | M | M | M | M | 29 | 69 | M | 29 | 69 | M | 29 | 69 | 4 | 09/2010 |
| 01557 | | | Pa | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 4 | 09/2010 |
| 01558 | | | Pa | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 4 | 09/2010 |
| 01559 | | | Pa | WHBODY | P | M | 1 | 3 | M | 1 | 6 | M | 1 | 6 | M | 1 | 6 | 4 | 09/2010 |
| 01560 | | | Pa | WHBODY | P | M | 2 | 5 | M | 2 | 7 | M | 2 | 7 | M | 2 | 7 | 4 | 09/2010 |
| 01561 | | | Pa | WHBODY | P | M | 7 | 15 | M | 8 | 19 | M | 8 | 19 | M | 8 | 19 | 4 | 09/2010 |
| 01562 | | | Pa | WHBODY | P | M | 4 | 4 | M | 6 | 8 | M | 6 | 8 | M | 6 | 8 | 4 | 09/2010 |
| 01563 | | | Pa | WHBODY | P | M | 3 | 6 | M | 6 | 14 | M | 6 | 14 | M | 6 | 14 | 4 | 09/2010 |
| 01564 | | | Pa | WHBODY | P | M | 2 | 4 | M | 5 | 10 | M | 5 | 10 | M | 5 | 10 | 4 | 09/2010 |
| 01565 | | | Pa | WHBODY | P | M | 3 | 5 | M | 6 | 11 | M | 6 | 11 | M | 6 | 11 | 4 | 09/2010 |
| 01566 | | | Pa | WHBODY | P | M | 2 | 4 | M | 22 | 44 | M | 22 | 44 | M | 22 | 44 | 4 | 09/2010 |

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| For Monitoring Period: | | | | | | 12/01/2010 - 12/31/2010 | | | Quarter 4 | | | 2010 | | | | | | | |
| 01567 | | | Pa | WHBODY | P | M | 7 | 15 | M | 11 | 23 | M | 11 | 24 | M | 11 | 24 | 4 | 09/2010 |
| 01568 | | | Pa | WHBODY | P | M | 6 | 13 | M | 10 | 23 | M | 10 | 23 | M | 10 | 23 | 4 | 09/2010 |
| 01569 | | | Pa | WHBODY | | M | M | M | M | 4 | 8 | M | 5 | 10 | M | 5 | 10 | 4 | 09/2010 |
| 01570 | | | Pa | WHBODY | | M | M | M | M | 4 | 8 | 1 | 5 | 8 | 1 | 5 | 8 | 4 | 09/2010 |
| 01571 | | | Pa | WHBODY | P | 11 | 11 | 9 | 11 | 12 | 13 | 11 | 12 | 13 | 11 | 12 | 13 | 4 | 09/2010 |
| 01572 | | | Pa | WHBODY | | M | M | M | M | M | 1 | M | M | 1 | M | M | 1 | 4 | 09/2010 |
| 01573 | | | Pa | WHBODY | | M | M | M | M | M | M | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 09/2010 |
| 01574 | | | Pa | WHBODY | | M | M | M | M | M | M | M | 1 | 1 | M | 1 | 1 | 4 | 09/2010 |
| 01575 | | | Pa | WHBODY | | M | M | M | M | M | M | M | 1 | 2 | M | 1 | 2 | 4 | 09/2010 |
| 01576 | | | Pa | WHBODY | P | M | 2 | 4 | M | 2 | 4 | M | 2 | 4 | M | 2 | 4 | 4 | 09/2010 |
| 01577 | | | Pa | WHBODY | P | M | 1 | 2 | M | 2 | 5 | M | 3 | 6 | M | 3 | 6 | 4 | 09/2010 |
| 01578 | | | Pa | WHBODY | P | M | 4 | 7 | M | 4 | 9 | M | 5 | 10 | M | 5 | 10 | 4 | 09/2010 |

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| 01579 | | | Pa | WHBODY | P | M 4 | 7 | M 6 | 11 | M 7 | 12 | M 7 | 12 | 4 | 09/2010 | | | | |
| 01580 | | | Pa | WHBODY | P | M 3 | 5 | M 5 | 10 | 1 6 | 12 | 1 6 | 12 | 4 | 09/2010 | | | | |
| 01581 | | | Pa | WHBODY | P | M 2 | 4 | M 5 | 11 | 1 6 | 13 | 1 6 | 13 | 4 | 09/2010 | | | | |
| 01582 | | | Pa | WHBODY | P | M 2 | 3 | M 5 | 10 | M 6 | 13 | M 6 | 13 | 4 | 09/2010 | | | | |
| 01583 | | | Pa | WHBODY | P | M 3 | 5 | M 4 | 9 | M 4 | 9 | M 4 | 9 | 4 | 09/2010 | | | | |
| 01584 | | | Pa | WHBODY | P | M 7 | 14 | M 7 | 15 | 1 8 | 16 | 1 8 | 16 | 4 | 09/2010 | | | | |
| 01585 | | | Pa | WHBODY | P | M 2 | 4 | M 5 | 10 | M 5 | 10 | M 5 | 10 | 4 | 09/2010 | | | | |
| 01586 | | | Pa | WHBODY | P | M 2 | 5 | M 5 | 12 | M 5 | 12 | M 5 | 12 | 4 | 09/2010 | | | | |
| 01587 | | | Pa | WHBODY | P | M 1 | 3 | M 4 | 9 | M 4 | 9 | M 4 | 9 | 4 | 09/2010 | | | | |
| 01588 | | | Pa | WHBODY | | M M | M | M 2 | 5 | M 2 | 5 | M 2 | 5 | 4 | 09/2010 | | | | |
| 01589 | | | Pa | WHBODY | | M M | M | M M | M | M M | M | M M | M | 4 | 09/2010 | | | | |
| 01590 | | | Pa | WHBODY | | M M | M | M M | M | M M | M | M M | M | 4 | 09/2010 | | | | |

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| 01591 | | | Pa | WHBODY | P | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 09/2010 |
| 01592 | | | Pa | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 4 | 09/2010 |
| 01593 | | | Pa | WHBODY | P | M | 3 | 5 | M | 3 | 5 | M | 3 | 5 | M | 3 | 5 | 4 | 09/2010 |
| 01594 | | | Pa | WHBODY | P | M | 1 | 2 | M | 1 | 2 | M | 1 | 2 | M | 1 | 2 | 4 | 09/2010 |
| 01595 | | | Pa | WHBODY | P | M | 3 | 5 | M | 3 | 5 | M | 3 | 5 | M | 3 | 5 | 4 | 09/2010 |
| 01596 | | | Pa | WHBODY | P | M | 2 | 3 | M | 2 | 3 | M | 2 | 3 | M | 2 | 3 | 4 | 09/2010 |
| 01597 | | | Pa | WHBODY | P | M | 4 | 7 | M | 4 | 7 | M | 4 | 7 | M | 4 | 7 | 4 | 09/2010 |
| 01598 | | | Pa | WHBODY | P | M | 8 | 16 | M | 8 | 16 | M | 8 | 16 | M | 8 | 16 | 4 | 09/2010 |
| 01599 | | | Pa | WHBODY | P | M | 2 | 3 | M | 2 | 3 | M | 2 | 3 | M | 2 | 3 | 4 | 09/2010 |
| 01600 | | | Pa | WHBODY | P | M | 6 | 13 | M | 6 | 13 | M | 6 | 13 | M | 6 | 13 | 4 | 09/2010 |
| 01601 | | | Pa | WHBODY | P | M | 8 | 16 | M | 8 | 16 | M | 8 | 16 | M | 8 | 16 | 4 | 09/2010 |
| 01602 | | | Pa | WHBODY | P | M | 2 | 5 | M | 2 | 5 | M | 2 | 5 | M | 2 | 5 | 4 | 09/2010 |

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| 01603 | | | Pa | WHBODY | P | M | 1 | 3 | M | 1 | 3 | M | 1 | 3 | M | 1 | 3 | 4 | 09/2010 |
| 01604 | | | Pa | WHBODY | P | M | 1 | 3 | M | 1 | 3 | M | 1 | 3 | M | 1 | 3 | 4 | 09/2010 |
| 01605 | | | Pa | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 4 | 09/2010 |
| 01606 | | | Pa | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 4 | 09/2010 |
| 01607 | | | Pa | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 4 | 09/2010 |
| 01608 | | | Pa | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 4 | 09/2010 |
| 01609 | | | Pa | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 4 | 09/2010 |
| 01610 | | | Pa | WHBODY | P | M | 2 | 5 | M | 2 | 5 | M | 2 | 5 | M | 2 | 5 | 4 | 09/2010 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 11/01/2010 - 11/30/2010 | | | Quarter 4 | | | 2010 | | | | | | | |
| 00APG CONTROL | | | Pa | CNTRL | | M | M | M | | | | | | | | | | 4 | 04/2009 |
| 01511 | | | Pa | WHBODY | P | M | 2 | 4 | M | 2 | 4 | 50 | 52 | 51 | 50 | 52 | 51 | 3 | 09/2010 |
| 01512 | | | Pa | WHBODY | P | M | 3 | 7 | M | 3 | 7 | 51 | 61 | 85 | 51 | 61 | 85 | 3 | 09/2010 |
| 01513 | | | Pa | WHBODY | P | M | 4 | 9 | M | 4 | 9 | 54 | 64 | 72 | 54 | 64 | 72 | 3 | 09/2010 |
| 01514 | | | Pa | WHBODY | P | M | 3 | 6 | M | 3 | 6 | 43 | 68 | 71 | 43 | 68 | 71 | 3 | 09/2010 |
| 01515 | | | Pa | WHBODY | P | M | 4 | 8 | M | 4 | 8 | 28 | 32 | 36 | 28 | 32 | 36 | 3 | 09/2010 |
| 01516 | | | Pa | WHBODY | P | M | 5 | 8 | M | 5 | 8 | 31 | 36 | 39 | 31 | 36 | 39 | 3 | 09/2010 |
| 01517 | | | Pa | WHBODY | P | M | 4 | 8 | M | 4 | 8 | 47 | 61 | 80 | 47 | 61 | 80 | 3 | 09/2010 |
| 01518 | | | Pa | WHBODY | P | M | 4 | 7 | M | 4 | 7 | 39 | 61 | 78 | 39 | 61 | 78 | 3 | 09/2010 |
| 01519 | | | Pa | WHBODY | P | M | 2 | 3 | M | 2 | 3 | 25 | 64 | 80 | 25 | 64 | 80 | 3 | 09/2010 |
| 01520 | | | Pa | WHBODY | P | M | 1 | 3 | M | 1 | 3 | 48 | 49 | 48 | 48 | 49 | 48 | 3 | 09/2010 |
| 01521 | | | Pa | WHBODY | P | M | 2 | 5 | M | 2 | 5 | 15 | 23 | 29 | 15 | 23 | 29 | 3 | 09/2010 |

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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 1103530023 | 02/16/2011 | 02/04/2011 | 8 |

| Part # / ID Number | Name / Birth Date | Sex | Dosimeter | Use | Radiation Quality | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 11/01/2010 - 11/30/2010 | | | Quarter 4 | | | 2010 | | | | | | | |
| 01522 | | | Pa | WHBODY | P | 1 | 1 | 3 | 1 | 1 | 3 | 17 | 21 | 24 | 17 | 21 | 24 | 3 | 09/2010 |
| 01523 | | | Pa | WHBODY | | M | M | M | M | M | M | 14 | 22 | 27 | 14 | 22 | 27 | 3 | 09/2010 |
| 01524 | | | Pa | WHBODY | | M | M | M | M | M | M | 15 | 22 | 26 | 15 | 22 | 26 | 3 | 09/2010 |
| 01525 | | | Pa | WHBODY | P | 1 | 1 | 3 | 1 | 1 | 3 | 17 | 24 | 29 | 17 | 24 | 29 | 3 | 09/2010 |
| 01526 | | | Pa | WHBODY | P | M | 2 | 5 | M | 2 | 5 | 15 | 22 | 28 | 15 | 22 | 28 | 3 | 09/2010 |
| 01527 | | | Pa | WHBODY | P | M | 10 | 20 | M | 10 | 20 | 13 | 33 | 49 | 13 | 33 | 49 | 3 | 09/2010 |
| 01528 | | | Pa | WHBODY | P | M | 4 | 8 | M | 4 | 8 | 13 | 26 | 35 | 13 | 26 | 35 | 3 | 09/2010 |
| 01529 | | | Pa | WHBODY | P | M | 6 | 10 | M | 6 | 10 | 12 | 31 | 40 | 12 | 31 | 40 | 3 | 09/2010 |
| 01530 | | | Pa | WHBODY | P | M | 2 | 6 | M | 2 | 6 | 15 | 26 | 36 | 15 | 26 | 36 | 3 | 09/2010 |
| 01531 | | | Pa | WHBODY | P | M | 9 | 19 | M | 9 | 19 | 16 | 30 | 42 | 16 | 30 | 42 | 3 | 09/2010 |
| 01532 | | | Pa | WHBODY | P | M | 1 | 3 | M | 1 | 3 | 16 | 23 | 29 | 16 | 23 | 29 | 3 | 09/2010 |
| 01533 | | | Pa | WHBODY | P | M | 5 | 9 | M | 5 | 9 | 16 | 24 | 29 | 16 | 24 | 29 | 3 | 09/2010 |

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|---|---|---|---|---|---|
| [redacted] | APG | 1103530023 | 02/16/2011 | 02/04/2011 | 8 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 11/01/2010 - 11/30/2010 | | | Quarter 4 | | | 2010 | | | | | | | |
| 01534 | | | Pa | WHBODY | P | M | 6 | 12 | M | 6 | 12 | 14 | 29 | 41 | 14 | 29 | 41 | 3 | 09/2010 |
| 01535 | | | Pa | WHBODY | P | M | 5 | 9 | M | 5 | 9 | 16 | 21 | 25 | 16 | 21 | 25 | 3 | 09/2010 |
| 01536 | | | Pa | WHBODY | P | M | 3 | 6 | M | 3 | 6 | 19 | 22 | 23 | 19 | 22 | 23 | 3 | 09/2010 |
| 01537 | | | Pa | WHBODY | P | M | 2 | 6 | M | 2 | 6 | M | 3 | 8 | M | 3 | 8 | 3 | 09/2010 |
| 01538 | | | Pa | WHBODY | P | M | M | 1 | M | M | 1 | 9 | 15 | 18 | 9 | 15 | 18 | 3 | 09/2010 |
| 01539 | | | Pa | WHBODY | | M | M | M | M | M | M | 12 | 15 | 16 | 12 | 15 | 16 | 3 | 09/2010 |
| 01540 | | | Pa | WHBODY | | M | M | M | M | M | M | 8 | 17 | 23 | 8 | 17 | 23 | 3 | 09/2010 |
| 01541 | | | Pa | WHBODY | | M | M | M | M | M | M | 9 | 15 | 15 | 9 | 15 | 15 | 3 | 09/2010 |
| 01542 | | | Pa | WHBODY | | M | M | M | M | M | M | 9 | 17 | 23 | 9 | 17 | 23 | 3 | 09/2010 |
| 01543 | | | Pa | WHBODY | P | M | 1 | 4 | M | 1 | 4 | 9 | 16 | 21 | 9 | 16 | 21 | 3 | 09/2010 |
| 01544 | | | Pa | WHBODY | P | M | 1 | 5 | M | 1 | 5 | 9 | 16 | 22 | 9 | 16 | 22 | 3 | 09/2010 |
| 01545 | | | Pa | WHBODY | P | M | 4 | 9 | M | 4 | 9 | M | 4 | 9 | M | 4 | 9 | 3 | 09/2010 |

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|---|---|---|---|---|---|
| [redacted] | APG | 1103530023 | 02/16/2011 | 02/04/2011 | 8 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 11/01/2010 - 11/30/2010 | | | Quarter 4 | | | 2010 | | | | | | | |
| 01546 | | | Pa | WHBODY | P | M | 3 | 6 | M | 3 | 6 | M | 3 | 6 | M | 3 | 6 | 3 | 09/2010 |
| 01547 | | | Pa | WHBODY | P | M | 3 | 6 | M | 3 | 6 | M | 3 | 6 | M | 3 | 6 | 3 | 09/2010 |
| 01548 | | | Pa | WHBODY | P | M | 3 | 7 | M | 3 | 7 | M | 3 | 7 | M | 3 | 7 | 3 | 09/2010 |
| 01549 | | | Pa | WHBODY | P | M | 4 | 7 | M | 4 | 7 | M | 4 | 7 | M | 4 | 7 | 3 | 09/2010 |
| 01550 | | | Pa | WHBODY | P | M | 3 | 7 | M | 3 | 7 | M | 3 | 7 | M | 3 | 7 | 3 | 09/2010 |
| 01551 | | | Pa | WHBODY | P | M | 4 | 9 | M | 4 | 9 | M | 4 | 9 | M | 4 | 9 | 3 | 09/2010 |
| 01552 | | | Pa | WHBODY | P | M | 2 | 5 | M | 2 | 5 | M | 2 | 5 | M | 2 | 5 | 3 | 09/2010 |
| 01553 | | | Pa | WHBODY | P | M | 1 | 4 | M | 1 | 4 | M | 1 | 4 | M | 1 | 4 | 3 | 09/2010 |
| 01554 | | | Pa | WHBODY | P | M | 1 | 4 | M | 1 | 4 | M | 1 | 4 | M | 1 | 4 | 3 | 09/2010 |
| 01555 | | | Pa | WHBODY | P | M | M | 1 | M | M | 1 | M | M | 1 | M | M | 1 | 3 | 09/2010 |
| 01556 | | | Pa | WHBODY | PM | M | 29 | 69 | M | 29 | 69 | M | 29 | 69 | M | 29 | 69 | 3 | 09/2010 |
| 01557 | | | Pa | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 3 | 09/2010 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Deep DDE | Eye LDE | Shallow SDE | Deep DDE | Eye LDE | Shallow SDE | Deep DDE | Eye LDE | Shallow SDE | Deep DDE | Eye LDE | Shallow SDE | | |
| For Monitoring Period: | | | | | | 11/01/2010 - 11/30/2010 | | | Quarter 4 | | | 2010 | | | | | | | |
| 01558 | | | Pa | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 3 | 09/2010 |
| 01559 | | | Pa | WHBODY | P | M | M | 3 | M | M | 3 | M | M | 3 | M | M | 3 | 3 | 09/2010 |
| 01560 | | | Pa | WHBODY | P | M | M | 2 | M | M | 2 | M | M | 2 | M | M | 2 | 3 | 09/2010 |
| 01561 | | | Pa | WHBODY | P | M | 1 | 4 | M | 1 | 4 | M | 1 | 4 | M | 1 | 4 | 3 | 09/2010 |
| 01562 | | | Pa | WHBODY | P | M | 2 | 4 | M | 2 | 4 | M | 2 | 4 | M | 2 | 4 | 3 | 09/2010 |
| 01563 | | | Pa | WHBODY | P | M | 3 | 8 | M | 3 | 8 | M | 3 | 8 | M | 3 | 8 | 3 | 09/2010 |
| 01564 | | | Pa | WHBODY | P | M | 3 | 6 | M | 3 | 6 | M | 3 | 6 | M | 3 | 6 | 3 | 09/2010 |
| 01565 | | | Pa | WHBODY | P | M | 3 | 6 | M | 3 | 6 | M | 3 | 6 | M | 3 | 6 | 3 | 09/2010 |
| 01566 | | | Pa | WHBODY | P | M | 20 | 40 | M | 20 | 40 | M | 20 | 40 | M | 20 | 40 | 3 | 09/2010 |
| 01567 | | | Pa | WHBODY | P | M | 4 | 8 | M | 4 | 8 | M | 4 | 9 | M | 4 | 9 | 3 | 09/2010 |
| 01568 | | | Pa | WHBODY | P | M | 4 | 10 | M | 4 | 10 | M | 4 | 10 | M | 4 | 10 | 3 | 09/2010 |
| 01569 | | | Pa | WHBODY | P | M | 4 | 8 | M | 4 | 8 | M | 5 | 10 | M | 5 | 10 | 3 | 09/2010 |

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| For Monitoring Period: | | | | | | 11/01/2010 - 11/30/2010 | | | Quarter 4 | | | 2010 | | | | | | | |
| 01570 | | | Pa | WHBODY | P | M | 4 | 8 | M | 4 | 8 | 1 | 5 | 8 | 1 | 5 | 8 | 3 | 09/2010 |
| 01571 | | | Pa | WHBODY | P | M | 1 | 4 | M | 1 | 4 | M | 1 | 4 | M | 1 | 4 | 3 | 09/2010 |
| 01572 | | | Pa | WHBODY | P | M | M | 1 | M | M | 1 | M | M | 1 | M | M | 1 | 3 | 09/2010 |
| 01573 | | | Pa | WHBODY | | M | M | M | M | M | M | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 09/2010 |
| 01574 | | | Pa | WHBODY | | M | M | M | M | M | M | M | 1 | 1 | M | 1 | 1 | 3 | 09/2010 |
| 01575 | | | Pa | WHBODY | | M | M | M | M | M | M | M | 1 | 2 | M | 1 | 2 | 3 | 09/2010 |
| 01576 | | | Pa | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 3 | 09/2010 |
| 01577 | | | Pa | WHBODY | P | M | 1 | 3 | M | 1 | 3 | M | 2 | 4 | M | 2 | 4 | 3 | 09/2010 |
| 01578 | | | Pa | WHBODY | P | M | M | 2 | M | M | 2 | M | 1 | 3 | M | 1 | 3 | 3 | 09/2010 |
| 01579 | | | Pa | WHBODY | P | M | 2 | 4 | M | 2 | 4 | M | 3 | 5 | M | 3 | 5 | 3 | 09/2010 |
| 01580 | | | Pa | WHBODY | P | M | 2 | 5 | M | 2 | 5 | 1 | 3 | 7 | 1 | 3 | 7 | 3 | 09/2010 |
| 01581 | | | Pa | WHBODY | P | M | 3 | 7 | M | 3 | 7 | 1 | 4 | 9 | 1 | 4 | 9 | 3 | 09/2010 |

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| 01582 | | | Pa | WHBODY | P | M | 3 | 7 | M | 3 | 7 | M | 4 | 10 | M | 4 | 10 | 3 | 09/2010 |
| 01583 | | | Pa | WHBODY | P | M | 1 | 4 | M | 1 | 4 | M | 1 | 4 | M | 1 | 4 | 3 | 09/2010 |
| 01584 | | | Pa | WHBODY | P | M | M | 1 | M | M | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 3 | 09/2010 |
| 01585 | | | Pa | WHBODY | P | M | 3 | 6 | M | 3 | 6 | M | 3 | 6 | M | 3 | 6 | 3 | 09/2010 |
| 01586 | | | Pa | WHBODY | P | M | 3 | 7 | M | 3 | 7 | M | 3 | 7 | M | 3 | 7 | 3 | 09/2010 |
| 01587 | | | Pa | WHBODY | P | M | 3 | 6 | M | 3 | 6 | M | 3 | 6 | M | 3 | 6 | 3 | 09/2010 |
| 01588 | | | Pa | WHBODY | P | M | 2 | 5 | M | 2 | 5 | M | 2 | 5 | M | 2 | 5 | 3 | 09/2010 |
| 01589 | | | Pa | CHEST | | | | | | | | M | M | M | M | M | M | 3 | 09/2010 |
| | | | | NOTE | | UNUSED | | | | | | | | | | | | | |
| 01590 | | | Pa | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 3 | 09/2010 |
| 01591 | | | Pa | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 3 | 09/2010 |
| 01592 | | | Pa | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 3 | 09/2010 |
| 01593 | | | Pa | CHEST | | | | | | | | M | M | M | M | M | M | 3 | 09/2010 |
| | | | | NOTE | | UNUSED | | | | | | | | | | | | | |

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| 01594 | | | Pa | CHEST | | | | | | | | M | M | M | M | M | M | 3 | 09/2010 |
| | | | | NOTE | | UNUSED | | | | | | | | | | | | | |
| 01595 | | | Pa | CHEST | | | | | | | | M | M | M | M | M | M | 3 | 09/2010 |
| | | | | NOTE | | UNUSED | | | | | | | | | | | | | |
| 01596 | | | Pa | CHEST | | | | | | | | M | M | M | M | M | M | 3 | 09/2010 |
| | | | | NOTE | | UNUSED | | | | | | | | | | | | | |
| 01597 | | | Pa | CHEST | | | | | | | | M | M | M | M | M | M | 3 | 09/2010 |
| | | | | NOTE | | UNUSED | | | | | | | | | | | | | |
| 01598 | | | Pa | CHEST | | | | | | | | M | M | M | M | M | M | 3 | 09/2010 |
| | | | | NOTE | | UNUSED | | | | | | | | | | | | | |
| 01599 | | | Pa | CHEST | | | | | | | | M | M | M | M | M | M | 3 | 09/2010 |
| | | | | NOTE | | UNUSED | | | | | | | | | | | | | |
| 01600 | | | Pa | CHEST | | | | | | | | M | M | M | M | M | M | 3 | 09/2010 |
| | | | | NOTE | | UNUSED | | | | | | | | | | | | | |
| 01601 | | | Pa | CHEST | | | | | | | | M | M | M | M | M | M | 3 | 09/2010 |
| | | | | NOTE | | UNUSED | | | | | | | | | | | | | |
| 01602 | | | Pa | CHEST | | | | | | | | M | M | M | M | M | M | 3 | 09/2010 |
| | | | | NOTE | | UNUSED | | | | | | | | | | | | | |
| 01603 | | | Pa | CHEST | | | | | | | | M | M | M | M | M | M | 3 | 09/2010 |
| | | | | NOTE | | UNUSED | | | | | | | | | | | | | |
| 01604 | | | Pa | CHEST | | | | | | | | M | M | M | M | M | M | 3 | 09/2010 |
| | | | | NOTE | | UNUSED | | | | | | | | | | | | | |
| 01605 | | | Pa | CHEST | | | | | | | | M | M | M | M | M | M | 3 | 09/2010 |
| | | | | NOTE | | UNUSED | | | | | | | | | | | | | |

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|---|---|---|---|---|---|
| [redacted] | APG | 1103530023 | 02/16/2011 | 02/04/2011 | 8 |

| Part # / Name / ID Number / Birth Date / Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | 11/01/2010 - 11/30/2010 | | | Quarter 4 | | | 2010 | | | | | | | |
| 01606 | Pa | CHEST | | | | | | | | M | M | M | M | M | M | 3 | 09/2010 |
| | | NOTE | | UNUSED | | | | | | | | | | | | | |
| 01607 | Pa | CHEST | | | | | | | | M | M | M | M | M | M | 3 | 09/2010 |
| | | NOTE | | UNUSED | | | | | | | | | | | | | |
| 01608 | Pa | CHEST | | | | | | | | M | M | M | M | M | M | 3 | 09/2010 |
| | | NOTE | | UNUSED | | | | | | | | | | | | | |
| 01609 | Pa | CHEST | | | | | | | | M | M | M | M | M | M | 3 | 09/2010 |
| | | NOTE | | UNUSED | | | | | | | | | | | | | |
| 01610 | Pa | CHEST | | | | | | | | M | M | M | M | M | M | 3 | 09/2010 |
| | | NOTE | | UNUSED | | | | | | | | | | | | | |

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Quality Control Release: JAS 1 PR 9697 RPT130 N1 03523



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TSIF Study Dosimetry Report

"X-Ray Only" Algorithm

Electronic Representation

# Radiation Dosimetry Report

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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 9700100004 | 01/17/2012 | | |

| Part # / ID Number | Name / Birth Date | Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 12/01/2010 - 12/31/2010 | | | Quarter 4 | | | 2010 | | | | | | | |
| 01511 | | | P | WHBODY | P | 385 | 458 | 497 | 385 | 458 | 497 | 435 | 508 | 544 | 435 | 508 | 544 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01512 | | | P | WHBODY | P | 438 | 510 | 545 | 438 | 510 | 545 | 489 | 568 | 623 | 489 | 568 | 623 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01513 | | | P | WHBODY | P | 447 | 516 | 549 | 447 | 516 | 549 | 501 | 576 | 612 | 501 | 576 | 612 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01514 | | | P | WHBODY | P | 598 | 707 | 765 | 598 | 707 | 765 | 641 | 772 | 830 | 641 | 772 | 830 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01515 | | | P | WHBODY | P | 598 | 715 | 778 | 598 | 715 | 778 | 626 | 743 | 806 | 626 | 743 | 806 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01516 | | | P | WHBODY | P | 539 | 641 | 696 | 539 | 641 | 696 | 570 | 672 | 727 | 570 | 672 | 727 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01517 | | | P | WHBODY | P | 457 | 522 | 551 | 457 | 522 | 551 | 504 | 579 | 623 | 504 | 579 | 623 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01518 | | | P | WHBODY | P | 317 | 362 | 382 | 317 | 362 | 382 | 356 | 419 | 453 | 356 | 419 | 453 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01519 | | | P | WHBODY | P | 339 | 389 | 411 | 339 | 389 | 411 | 364 | 451 | 488 | 364 | 451 | 488 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01520 | | | P | WHBODY | P | 2 | 1 | 1 | 2 | 1 | 1 | 50 | 49 | 46 | 50 | 49 | 46 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01521 | | | P | WHBODY | P | 1 | M | M | 1 | M | M | 16 | 21 | 24 | 16 | 21 | 24 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01522 | | | P | WHBODY | P | 5 | 4 | 4 | 5 | 4 | 4 | 21 | 24 | 25 | 21 | 24 | 25 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

M: MINIMAL REPORTING SERVICE OF 1 MREM

Quality Control Release: RQR 1 PR 9928 RPT130 N1 D0001



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Electronic Representation

# Radiation Dosimetry Report

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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 9700100004 | 01/17/2012 | | |

| Part # / Name / ID Number / Birth Date / Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | 12/01/2010 - 12/31/2010 | | | Quarter 4 | | | 2010 | | | | | | | |
| 01523 | P | WHBODY | P | 7 | 6 | 6 | 7 | 6 | 6 | 21 | 28 | 33 | 21 | 28 | 33 | 6 | 09/2010 |
| | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01524 | P | WHBODY | P | 6 | 5 | 5 | 6 | 5 | 5 | 21 | 27 | 31 | 21 | 27 | 31 | 6 | 09/2010 |
| | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01525 | P | WHBODY | P | 8 | 8 | 8 | 8 | 8 | 8 | 24 | 31 | 34 | 24 | 31 | 34 | 7 | 09/2010 |
| | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01526 | P | WHBODY | P | 5 | 4 | 4 | 5 | 4 | 4 | 20 | 24 | 27 | 20 | 24 | 27 | 7 | 09/2010 |
| | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01527 | P | WHBODY | P | 6 | 5 | 5 | 6 | 5 | 5 | 19 | 28 | 34 | 19 | 28 | 34 | 6 | 09/2010 |
| | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| [redacted] | | | | | | | | | | | | | | | | | |

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Quality Control Release: RQR 1 PR 9928 RPT130 N1 D0001



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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 9700100004 | 01/18/2012 | | |

| Part # / ID Number | Name / Birth Date | Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 12/01/2010 - 12/31/2010 | | | Quarter 4 | | | 2010 | | | | | | | |
| 01528 | | | P | WHBODY | P | 57 | 63 | 65 | 57 | 63 | 66 | 70 | 85 | 93 | 70 | 85 | 93 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01529 | | | P | WHBODY | P | 56 | 61 | 63 | 58 | 63 | 65 | 70 | 88 | 95 | 70 | 88 | 95 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01530 | | | P | WHBODY | P | 57 | 65 | 69 | 57 | 65 | 69 | 72 | 89 | 99 | 72 | 89 | 99 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01531 | | | P | WHBODY | P | 57 | 64 | 66 | 57 | 64 | 66 | 73 | 85 | 89 | 73 | 85 | 89 | 6 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01532 | | | P | WHBODY | P | 48 | 55 | 57 | 48 | 55 | 57 | 64 | 77 | 83 | 64 | 77 | 83 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01533 | | | P | WHBODY | P | 49 | 56 | 59 | 49 | 56 | 60 | 65 | 75 | 80 | 65 | 75 | 80 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01534 | | | P | WHBODY | P | 48 | 54 | 56 | 48 | 54 | 56 | 62 | 77 | 85 | 62 | 77 | 85 | 6 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01535 | | | P | WHBODY | P | 44 | 51 | 53 | 44 | 51 | 54 | 60 | 67 | 70 | 60 | 67 | 70 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 9700100004 | 01/17/2012 | | |

| Part # / ID Number | Name / Birth Date | Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 12/01/2010 - 12/31/2010 | | | Quarter 4 | | | 2010 | | | | | | | |
| [redacted] | | | | | | | | | | | | | | | | | | | |
| [redacted] | | | | | | | | | | | | | | | | | | | |
| [redacted] | | | | | | | | | | | | | | | | | | | |
| [redacted] | | | | | | | | | | | | | | | | | | | |
| [redacted] | | | | | | | | | | | | | | | | | | | |
| 01536 | | P | WHBODY | P | 1 | 1 | 1 | 1 | 1 | 1 | 20 | 20 | 18 | 20 | 20 | 18 | 7 | 09/2010 |
| | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01537 | | P | WHBODY | P | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 3 | 1 | 2 | 3 | 7 | 09/2010 |
| | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01538 | | P | WHBODY | P | 3 | 2 | 2 | 3 | 2 | 2 | 12 | 17 | 19 | 12 | 17 | 19 | 7 | 09/2010 |
| | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01539 | | P | WHBODY | P | 4 | 4 | 4 | 4 | 4 | 4 | 16 | 19 | 20 | 16 | 19 | 20 | 6 | 09/2010 |
| | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01540 | | P | WHBODY | P | 6 | 5 | 5 | 6 | 5 | 5 | 14 | 22 | 28 | 14 | 22 | 28 | 6 | 09/2010 |
| | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01541 | | P | WHBODY | P | 4 | 3 | 3 | 4 | 3 | 3 | 13 | 18 | 18 | 13 | 18 | 18 | 6 | 09/2010 |
| | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01542 | | P | WHBODY | P | 8 | 8 | 8 | 8 | 8 | 8 | 17 | 25 | 31 | 17 | 25 | 31 | 6 | 09/2010 |
| | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 9700100004 | 01/17/2012 | | |

| Part # / ID Number | Name / Birth Date | Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 12/01/2010 - 12/31/2010 | | | Quarter 4 | | | 2010 | | | | | | | |
| 01543 | | | P | WHBODY | P | 13 | 13 | 13 | 13 | 13 | 13 | 22 | 28 | 30 | 22 | 28 | 30 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01544 | | | P | WHBODY | P | 41 | 47 | 49 | 41 | 47 | 49 | 50 | 62 | 66 | 50 | 62 | 66 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01545 | | | P | WHBODY | P | 38 | 42 | 43 | 38 | 42 | 43 | 38 | 42 | 43 | 38 | 42 | 43 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01546 | | | P | WHBODY | P | 39 | 43 | 43 | 39 | 43 | 43 | 39 | 43 | 43 | 39 | 43 | 43 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01547 | | | P | WHBODY | P | 37 | 40 | 41 | 37 | 40 | 41 | 37 | 40 | 41 | 37 | 40 | 41 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01548 | | | P | WHBODY | P | 37 | 41 | 42 | 37 | 41 | 42 | 37 | 41 | 42 | 37 | 41 | 42 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01549 | | | P | WHBODY | P | 34 | 38 | 38 | 34 | 38 | 38 | 34 | 38 | 38 | 34 | 38 | 38 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01550 | | | P | WHBODY | P | 34 | 37 | 38 | 34 | 37 | 38 | 34 | 37 | 38 | 34 | 37 | 38 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01551 | | | P | WHBODY | P | 34 | 37 | 37 | 34 | 37 | 37 | 34 | 37 | 37 | 34 | 37 | 37 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01552 | | | P | WHBODY | P | 103 | 118 | 125 | 103 | 118 | 125 | 103 | 118 | 125 | 103 | 118 | 125 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01553 | | | P | WHBODY | P | 104 | 117 | 122 | 104 | 117 | 122 | 104 | 117 | 122 | 104 | 117 | 122 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01554 | | | P | WHBODY | P | 3 | 2 | 2 | 3 | 2 | 2 | 3 | 2 | 2 | 3 | 2 | 2 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 12/01/2010 - 12/31/2010 | | | Quarter 4 | | | 2010 | | | | | | | |
| 01555 | | | P | WHBODY | P | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01556 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 5 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01557 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 5 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01558 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 5 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01559 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01560 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01561 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 6 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01562 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01563 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01564 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01565 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01566 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

M: MINIMAL REPORTING SERVICE OF 1 MREM

Quality Control Release: RQR 1 PR 9928 RPT130 N1 D0001



Accredited by the National Institute of Standards and Technology through NVLAP for the scope of accreditation under NVLAP Lab Code 100518-0**.

Electronic Representation

# Radiation Dosimetry Report

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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 9700100004 | 01/17/2012 | | |

| Part # / ID Number | Name / Birth Date | Sex | Dosimeter | Use | Radiation Quality | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 12/01/2010 - 12/31/2010 | | | Quarter 4 | | | 2010 | | | | | | | |
| 01567 | | | P | WHBODY | | M | M | M | M | M | M | M | M | 1 | M | M | 1 | 6 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01568 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 6 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01569 | | | P | WHBODY | | M | M | M | M | M | M | M | 1 | 2 | M | 1 | 2 | 6 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01570 | | | P | WHBODY | | M | M | M | M | M | M | 1 | 1 | M | 1 | 1 | M | 6 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01571 | | | P | WHBODY | P | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01572 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 6 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01573 | | | P | WHBODY | | M | M | M | M | M | M | 1 | 1 | 1 | 1 | 1 | 1 | 5 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01574 | | | P | WHBODY | | M | M | M | M | M | M | M | 1 | 1 | M | 1 | 1 | 5 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01575 | | | P | WHBODY | | M | M | M | M | M | M | M | 1 | 2 | M | 1 | 2 | 5 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01576 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 6 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01577 | | | P | WHBODY | | M | M | M | M | M | M | M | 1 | 1 | M | 1 | 1 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01578 | | | P | WHBODY | | M | M | M | M | M | M | M | 1 | 1 | M | 1 | 1 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

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Quality Control Release: RQR 1 PR 9928 RPT130 N1 D0001



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|---|---|---|---|---|---|
| [redacted] | APG | 9700100004 | 01/17/2012 | | |

| Part # / ID Number | Name / Birth Date | Sex | Dosimeter | Use | Radiation Quality | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 12/01/2010 - 12/31/2010 | | | Quarter 4 | | | 2010 | | | | | | | |
| 01579 | | | P | WHBODY | | M | M | M | M | M | M | M | 1 | 1 | M | 1 | 1 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01580 | | | P | WHBODY | | M | M | M | M | M | M | 1 | 1 | 2 | 1 | 1 | 2 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01581 | | | P | WHBODY | | M | M | M | M | M | M | 1 | 1 | 2 | 1 | 1 | 2 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01582 | | | P | WHBODY | | M | M | M | M | M | M | M | 1 | 3 | M | 1 | 3 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01583 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01584 | | | P | WHBODY | | M | M | M | M | M | M | 1 | 1 | 1 | 1 | 1 | 1 | 6 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01585 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01586 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01587 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01588 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 6 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01589 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 5 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01590 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 5 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

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|---|---|---|---|---|---|
| [redacted] | APG | 9700100004 | 01/17/2012 | | |

| Part # / ID Number | Name / Birth Date | Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 12/01/2010 - 12/31/2010 | | | Quarter 4 | | | 2010 | | | | | | | |
| 01591 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 6 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01592 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 5 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01593 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 6 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01594 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 6 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01595 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 6 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01596 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 6 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01597 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 6 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01598 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 5 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01599 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 6 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01600 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 6 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01601 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 5 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01602 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 6 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

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| For Monitoring Period: | | | | | | 12/01/2010 - 12/31/2010 | | | Quarter 4 | | | 2010 | | | | | | | |
| 01603 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 6 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01604 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 6 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01605 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 5 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01606 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 5 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01607 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 5 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01608 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 5 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01609 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 5 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01610 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 6 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 11/01/2010 - 11/30/2010 | | | Quarter 4 | | | 2010 | | | | | | | |
| 01511 | | | P | WHBODY | | M | M | M | 385 | 458 | 497 | 435 | 508 | 544 | 435 | 508 | 544 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01512 | | | P | WHBODY | | M | M | M | 438 | 510 | 545 | 489 | 568 | 623 | 489 | 568 | 623 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01513 | | | P | WHBODY | P | 1 | M | M | 448 | 516 | 549 | 502 | 576 | 612 | 502 | 576 | 612 | 11 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01514 | | | P | WHBODY | | M | M | M | 598 | 707 | 765 | 641 | 772 | 830 | 641 | 772 | 830 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01515 | | | P | WHBODY | | M | M | M | 598 | 715 | 778 | 626 | 743 | 806 | 626 | 743 | 806 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01516 | | | P | WHBODY | P | 1 | M | M | 540 | 641 | 696 | 571 | 672 | 727 | 571 | 672 | 727 | 11 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01517 | | | P | WHBODY | P | 1 | M | M | 458 | 522 | 551 | 505 | 579 | 623 | 505 | 579 | 623 | 11 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01518 | | | P | WHBODY | P | 1 | M | M | 318 | 362 | 382 | 357 | 419 | 453 | 357 | 419 | 453 | 11 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01519 | | | P | WHBODY | P | 2 | 1 | 1 | 341 | 390 | 411 | 366 | 452 | 488 | 366 | 452 | 488 | 11 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01520 | | | P | WHBODY | | M | M | M | 2 | 1 | 1 | 50 | 49 | 46 | 50 | 49 | 46 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01521 | | | P | WHBODY | | M | M | M | 1 | M | M | 16 | 21 | 24 | 16 | 21 | 24 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01522 | | | P | WHBODY | | M | M | M | 5 | 4 | 4 | 21 | 24 | 25 | 21 | 24 | 25 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

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| For Monitoring Period: | | | | | | 11/01/2010 - 11/30/2010 | | | Quarter 4 | | | 2010 | | | | | | | |
| 01523 | | | P | WHBODY | | M | M | M | 7 | 6 | 6 | 21 | 28 | 33 | 21 | 28 | 33 | 8 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01524 | | | P | WHBODY | | M | M | M | 6 | 5 | 5 | 21 | 27 | 31 | 21 | 27 | 31 | 8 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01525 | | | P | WHBODY | | M | M | M | 8 | 8 | 8 | 24 | 31 | 34 | 24 | 31 | 34 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01526 | | | P | WHBODY | | M | M | M | 5 | 4 | 4 | 20 | 24 | 27 | 20 | 24 | 27 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01527 | | | P | WHBODY | P | 1 | M | M | 7 | 5 | 5 | 20 | 28 | 34 | 20 | 28 | 34 | 10 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01528 | | | P | WHBODY | P | 1 | M | M | 58 | 63 | 65 | 71 | 85 | 92 | 71 | 85 | 92 | 10 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01529 | | | P | WHBODY | P | 2 | 2 | 2 | 58 | 63 | 65 | 70 | 88 | 95 | 70 | 88 | 95 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01530 | | | P | WHBODY | | M | M | M | 57 | 65 | 69 | 72 | 89 | 99 | 72 | 89 | 99 | 8 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01531 | | | P | WHBODY | | M | M | M | 57 | 64 | 66 | 73 | 85 | 89 | 73 | 85 | 89 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01532 | | | P | WHBODY | | M | M | M | 48 | 55 | 57 | 64 | 77 | 83 | 64 | 77 | 83 | 8 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01533 | | | P | WHBODY | P | 1 | M | M | 50 | 56 | 59 | 66 | 75 | 79 | 66 | 75 | 79 | 10 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01534 | | | P | WHBODY | | M | M | M | 48 | 54 | 56 | 62 | 77 | 85 | 62 | 77 | 85 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

M: MINIMAL REPORTING SERVICE OF 1 MREM

Quality Control Release: RQR 1 PR 9933 RPT130 N1 D0001



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Electronic Representation

# Radiation Dosimetry Report

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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 9700100004 | 01/24/2012 | | |

| Part # / ID Number | Name / Birth Date | Sex | Dosimeter | Use | Radiation Quality | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 11/01/2010 - 11/30/2010 | | | Quarter 4 | | | 2010 | | | | | | | |
| 01535 | | | P | CHEST | P | 1 | M | M | | | | | | | | | | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| | | | P | CHEST | P | 1 | M | M | | | | | | | | | | | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| | | | | ASSIGN | | 1 | M | M | 45 | 51 | 53 | 61 | 67 | 69 | 61 | 67 | 69 | | |
| 01536 | | | P | WHBODY | P | 1 | M | M | 2 | 1 | 1 | 21 | 20 | 18 | 21 | 20 | 18 | 11 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01537 | | | P | WHBODY | | M | M | M | 1 | 1 | 1 | 1 | 2 | 3 | 1 | 2 | 3 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01538 | | | P | WHBODY | | M | M | M | 3 | 2 | 2 | 12 | 17 | 19 | 12 | 17 | 19 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01539 | | | P | WHBODY | P | 14 | 14 | 14 | 18 | 18 | 18 | 30 | 33 | 34 | 30 | 33 | 34 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01540 | | | P | WHBODY | | M | M | M | 6 | 5 | 5 | 14 | 22 | 28 | 14 | 22 | 28 | 8 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01541 | | | P | WHBODY | | M | M | M | 4 | 3 | 3 | 13 | 18 | 18 | 13 | 18 | 18 | 8 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01542 | | | P | WHBODY | | M | M | M | 8 | 8 | 8 | 17 | 25 | 31 | 17 | 25 | 31 | 8 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01543 | | | P | WHBODY | | M | M | M | 13 | 13 | 13 | 22 | 28 | 30 | 22 | 28 | 30 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01544 | | | P | WHBODY | | M | M | M | 41 | 47 | 49 | 50 | 62 | 66 | 50 | 62 | 66 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01545 | | | P | WHBODY | | M | M | M | 38 | 42 | 43 | 38 | 42 | 43 | 38 | 42 | 43 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

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Electronic Representation

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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 9700100004 | 01/24/2012 | | |

| Part # / ID Number | Name / Birth Date | Sex | Dosimeter | Use | Radiation Quality | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 11/01/2010 - 11/30/2010 | | | Quarter 4 | | | 2010 | | | | | | | |
| 01546 | | | P | WHBODY | | M | M | M | 39 | 43 | 43 | 39 | 43 | 43 | 39 | 43 | 43 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01547 | | | P | WHBODY | | M | M | M | 37 | 40 | 41 | 37 | 40 | 41 | 37 | 40 | 41 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01548 | | | P | WHBODY | | M | M | M | 37 | 41 | 42 | 37 | 41 | 42 | 37 | 41 | 42 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01549 | | | P | WHBODY | | M | M | M | 34 | 38 | 38 | 34 | 38 | 38 | 34 | 38 | 38 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01550 | | | P | WHBODY | | M | M | M | 34 | 37 | 38 | 34 | 37 | 38 | 34 | 37 | 38 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01551 | | | P | WHBODY | | M | M | M | 34 | 37 | 37 | 34 | 37 | 37 | 34 | 37 | 37 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01552 | | | P | WHBODY | | M | M | M | 103 | 118 | 125 | 103 | 118 | 125 | 103 | 118 | 125 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01553 | | | P | WHBODY | | M | M | M | 104 | 117 | 122 | 104 | 117 | 122 | 104 | 117 | 122 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01554 | | | P | WHBODY | | M | M | M | 3 | 2 | 2 | 3 | 2 | 2 | 3 | 2 | 2 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01555 | | | P | WHBODY | | M | M | M | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01556 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01557 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

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Quality Control Release: RQR 1 PR 9933 RPT130 N1 D0001



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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 9700100004 | 01/24/2012 | | |

| Part # / ID Number | Name / Birth Date | Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 11/01/2010 - 11/30/2010 | | | Quarter 4 | | | 2010 | | | | | | | |
| 01558 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01559 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01560 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01561 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 8 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01562 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01563 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01564 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01565 | | | P | WHBODY | P | 1 | M | M | 1 | M | M | 1 | M | M | 1 | M | M | 11 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01566 | | | P | WHBODY | P | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01567 | | | P | WHBODY | | M | M | M | M | M | M | M | M | 1 | M | M | 1 | 8 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01568 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 8 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01569 | | | P | WHBODY | P | 1 | M | M | 1 | M | M | 1 | 1 | 2 | 1 | 1 | 2 | 10 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 9700100004 | 01/24/2012 | | |

| Part # / ID Number | Name / Birth Date | Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 11/01/2010 - 11/30/2010 | | | Quarter 4 | | | 2010 | | | | | | | |
| 01570 | | | P | WHBODY | P | 1 | M | M | 1 | M | M | 2 | 1 | M | 2 | 1 | M | 10 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01571 | | | P | WHBODY | | M | M | M | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01572 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 8 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01573 | | | P | WHBODY | | M | M | M | M | M | M | 1 | 1 | 1 | 1 | 1 | 1 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01574 | | | P | WHBODY | | M | M | M | M | M | M | M | 1 | 1 | M | 1 | 1 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01575 | | | P | WHBODY | | M | M | M | M | M | M | M | 1 | 2 | M | 1 | 2 | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01576 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 8 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01577 | | | P | WHBODY | | M | M | M | M | M | M | M | 1 | 1 | M | 1 | 1 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01578 | | | P | WHBODY | | M | M | M | M | M | M | M | 1 | 1 | M | 1 | 1 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01579 | | | P | WHBODY | P | 1 | M | M | 1 | M | M | 1 | 1 | 1 | 1 | 1 | 1 | 11 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01580 | | | P | WHBODY | | M | M | M | M | M | M | 1 | 1 | 2 | 1 | 1 | 2 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01581 | | | P | WHBODY | | M | M | M | M | M | M | 1 | 1 | 2 | 1 | 1 | 2 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

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|---|---|---|---|---|---|
| [redacted] | APG | 9700100004 | 01/24/2012 | | |

| Part # / ID Number | Name / Birth Date | Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 11/01/2010 - 11/30/2010 | | | Quarter 4 | | | 2010 | | | | | | | |
| 01582 | | | P | WHBODY | | M | M | M | M | M | M | M | 1 | 3 | M | 1 | 3 | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01583 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01584 | | | P | WHBODY | | M | M | M | M | M | M | 1 | 1 | 1 | 1 | 1 | 1 | 8 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01585 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01586 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01587 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 9 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01588 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 8 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01590 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01591 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 8 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01592 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 7 | 09/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

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Quality Control Release: RQR 1 PR 9933 RPT130 N1 D0001



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Boston Logan International Airport (BOS) Data Set #1 Dosimetry Report

Default Algorithm

**Electronic Representation**

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|---|---|---|---|---|---|
| [redacted] | PHL | 9700100003 | 12/17/2010 | | |

| Part # / ID Number | Name | Birth Date | Sex | Dosimeter | Use | Radiation Quality | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Inception Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **For Monitoring Period:** | | | | | | | **04/01/2010 - 06/30/2010** | | | **Quarter 2** | | | **2010** | | | | | | | |
| 01444 | SPARE | | | Pa | CHEST | | | | | | | | M | M | M | M | M | M | 2 | 09/2009 |
| | | | | | NOTE | | UNUSED | | | | | | | | | | | | | |
| 01445 | SPARE | | | Pa | CHEST | | | | | | | | M | M | M | M | M | M | 2 | 09/2009 |
| | | | | | NOTE | | UNUSED | | | | | | | | | | | | | |
| 01447 | SPARE | | | Pa | WHBODY | P | 2 | 2 | 4 | 2 | 2 | 4 | 2 | 2 | 4 | 2 | 2 | 4 | 2 | 09/2009 |
| 01448 | SPARE | | | Pa | WHBODY | PM | 50 | 54 | 56 | 50 | 54 | 56 | 50 | 54 | 56 | 50 | 54 | 56 | 2 | 09/2009 |
| 01449 | SPARE | | | Pa | WHBODY | P | 11 | 11 | 13 | 11 | 11 | 13 | 11 | 11 | 13 | 11 | 11 | 13 | 2 | 09/2009 |
| 01450 | SPARE | | | Pa | WHBODY | PM | 62 | 67 | 70 | 62 | 67 | 70 | 62 | 67 | 70 | 62 | 67 | 70 | 2 | 09/2009 |

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Quality Control Release: RQR 1 PR 9657 RPT130 N1 C0001



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Boston Logan International Airport (BOS) Data Set #1 Dosimetry Report

"X-Ray Only" Algorithm

Electronic Representation

# Radiation Dosimetry Report

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[redacted]

| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | PHL | 9700100004 | 01/17/2012 | | |

| Part # / Name / ID Number | Birth Date | Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 04/01/2010 - 06/30/2010 | | | Quarter 2 | | | 2010 | | | | | | | |
| 01447 SPARE | | | P | WHBODY | P | 6 | 4 | 4 | 6 | 4 | 4 | 6 | 4 | 4 | 6 | 4 | 4 | 4 | 09/2009 |
| NOTE | | | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01448 SPARE | | | P | WHBODY | P | 52 | 56 | 56 | 52 | 56 | 56 | 52 | 56 | 56 | 52 | 56 | 56 | 4 | 09/2009 |
| NOTE | | | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01449 SPARE | | | P | WHBODY | P | 14 | 13 | 13 | 14 | 13 | 13 | 14 | 13 | 13 | 14 | 13 | 13 | 4 | 09/2009 |
| NOTE | | | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01450 SPARE | | | P | WHBODY | P | 64 | 70 | 70 | 64 | 70 | 70 | 64 | 70 | 70 | 64 | 70 | 70 | 4 | 09/2009 |
| NOTE | | | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

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Quality Control Release: RQR 1 PR 9928 RPT130 N1 D0001



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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | PHL | 9700100003 | 12/17/2010 | | |

| Part # / Name / ID Number | Birth Date | Sex | Dosimeter | Use | Radiation Quality | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Inception Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 07/01/2010 - 09/30/2010 | | | Quarter 3 | | | 2010 | | | | | | | |
| [redacted] | | | | | | | | | | | | | | | | | | | |
| 01438 SPARE | | | Pa | WHBODY | PB | 33 | 39 | 61 | 33 | 39 | 61 | 33 | 39 | 61 | 33 | 39 | 61 | 3 | 09/2009 |
| | | | | | P | 33 | 39 | 33 | | | | | | | | | | | |
| | | | | | BH | | | 28 | | | | | | | | | | | |

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Quality Control Release: RQR 1 PR 9657 RPT130 N1 C0001



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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | PHL | 9700100003 | 12/17/2010 | | |

| Part # / ID Number | Name | Birth Date | Sex | Dosimeter | Use | Radiation Quality | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Inception Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **For Monitoring Period:** | | | | | | | **07/01/2010 - 09/30/2010** | | | **Quarter 3** | | | **2010** | | | | | | | |
| 01439 | SPARE | | | Pa | WHBODY | PM | 28 | 37 | 55 | 28 | 37 | 55 | 28 | 37 | 55 | 28 | 37 | 55 | 3 | 09/2009 |
| 01440 | SPARE | | | Pa | WHBODY | PM | 40 | 40 | 38 | 40 | 40 | 38 | 40 | 40 | 38 | 40 | 40 | 38 | 3 | 09/2009 |
| 01441 | SPARE | | | Pa | WHBODY | PM | 25 | 39 | 60 | 25 | 39 | 60 | 25 | 39 | 60 | 25 | 39 | 60 | 2 | 09/2009 |
| 01442 | SPARE | | | Pa | WHBODY | PM | 55 | 55 | 52 | 55 | 55 | 52 | 55 | 55 | 52 | 55 | 55 | 52 | 3 | 09/2009 |
| 01443 | SPARE | | | Pa | WHBODY | PM | 48 | 48 | 73 | 48 | 48 | 73 | 48 | 48 | 73 | 48 | 48 | 73 | 3 | 09/2009 |
| 01444 | SPARE | | | Pa | WHBODY | P | 9 | 9 | 8 | 9 | 9 | 8 | 9 | 9 | 8 | 9 | 9 | 8 | 3 | 09/2009 |
| 01445 | SPARE | | | Pa | WHBODY | PM | 19 | 32 | 53 | 19 | 32 | 53 | 19 | 32 | 53 | 19 | 32 | 53 | 3 | 09/2009 |
| 01447 | SPARE | | | Pa | WHBODY | P | M | M | 1 | 1 | 1 | 1 | 3 | 3 | 5 | 3 | 3 | 5 | 3 | 09/2009 |
| 01448 | SPARE | | | Pa | WHBODY | PM | 36 | 36 | 45 | 36 | 36 | 45 | 86 | 90 | 101 | 86 | 90 | 101 | 3 | 09/2009 |
| 01449 | SPARE | | | Pa | WHBODY | PM | 22 | 29 | 43 | 22 | 29 | 43 | 33 | 40 | 56 | 33 | 40 | 56 | 3 | 09/2009 |
| 01450 | SPARE | | | Pa | WHBODY | PM | 44 | 44 | 53 | 44 | 44 | 53 | 106 | 111 | 123 | 106 | 111 | 123 | 3 | 09/2009 |
| [redacted] | | | | | | | | | | | | | | | | | | | | |

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Quality Control Release: RQR 1 PR 9657 RPT130 N1 C0001



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Boston Logan International Airport (BOS) Data Set #2 Dosimetry Report

"X-Ray Only" Algorithm

Electronic Representation

# Radiation Dosimetry Report

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[redacted]

| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | PHL | 9700100004 | 01/18/2012 | | |

| Part # / ID Number | Name / Birth Date | Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 07/01/2010 - 09/30/2010 | | | Quarter 3 | | | 2010 | | | | | | | |
| 01438 | SPARE | | P | WHBODY | P | 28 | 29 | 29 | 28 | 29 | 29 | 28 | 29 | 29 | 28 | 29 | 29 | 4 | 09/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01439 | SPARE | | P | WHBODY | P | 29 | 30 | 30 | 29 | 30 | 30 | 29 | 30 | 30 | 29 | 30 | 30 | 4 | 09/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01440 | SPARE | | P | WHBODY | P | 26 | 27 | 27 | 26 | 27 | 27 | 26 | 27 | 27 | 26 | 27 | 27 | 4 | 09/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01441 | SPARE | | P | WHBODY | P | 29 | 30 | 30 | 29 | 30 | 30 | 29 | 30 | 30 | 29 | 30 | 30 | 3 | 09/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01442 | SPARE | | P | WHBODY | P | 35 | 37 | 37 | 35 | 37 | 37 | 35 | 37 | 37 | 35 | 37 | 37 | 4 | 09/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01443 | SPARE | | P | WHBODY | P | 38 | 41 | 41 | 38 | 41 | 41 | 38 | 41 | 41 | 38 | 41 | 41 | 4 | 09/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01444 | SPARE | | P | WHBODY | P | 9 | 8 | 8 | 9 | 8 | 8 | 9 | 8 | 8 | 9 | 8 | 8 | 4 | 09/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01445 | SPARE | | P | WHBODY | P | 22 | 24 | 24 | 22 | 24 | 24 | 22 | 24 | 24 | 22 | 24 | 24 | 4 | 09/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01447 | SPARE | | P | WHBODY | | M | M | M | M | M | M | 6 | 4 | 4 | 6 | 4 | 4 | 5 | 09/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01448 | SPARE | | P | WHBODY | P | 27 | 28 | 28 | 27 | 28 | 28 | 79 | 84 | 84 | 79 | 84 | 84 | 5 | 09/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01449 | SPARE | | P | WHBODY | P | 23 | 24 | 24 | 23 | 24 | 24 | 37 | 37 | 37 | 37 | 37 | 37 | 5 | 09/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01450 | SPARE | | P | WHBODY | P | 31 | 33 | 33 | 31 | 33 | 33 | 95 | 103 | 103 | 95 | 103 | 103 | 5 | 09/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

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Quality Control Release: RQR 1 PR 9929 RPT130 N1 D0001

Boston Logan International Airport (BOS) Data Set #3 Dosimetry Report

Default Algorithm

Electronic Representation

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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 1119580310 | 07/21/2011 | 07/14/2011 | 5 |

| Part # / ID Number | Name / Birth Date | Sex | Dosimeter | Use | Radiation Quality | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 04/01/2011 - 06/30/2011 | | | Quarter 2 | | | 2011 | | | | | | | |
| 00APG | CONTROL | | Pa | CNTRL | | M | M | M | | | | | | | | | | 3 | 04/2009 |
| 01760 | | | Pa | WHBODY | P | 3 | 2 | 2 | 3 | 2 | 2 | 3 | 2 | 2 | 3 | 2 | 2 | 1 | 01/2011 |
| 01761 | | | Pa | WHBODY | PM | 48 | 69 | 104 | 48 | 69 | 104 | 48 | 69 | 104 | 48 | 69 | 104 | 1 | 01/2011 |
| 01762 | | | Pa | WHBODY | PB | 19 | 81 | 163 | 19 | 81 | 163 | 19 | 81 | 163 | 19 | 81 | 163 | 1 | 01/2011 |
| | | | | | P | 19 | 81 | 18 | | | | | | | | | | | |
| | | | | | BH | | | 145 | | | | | | | | | | | |
| 01763 | | | Pa | WHBODY | P | 8 | 15 | 15 | 8 | 15 | 15 | 8 | 15 | 15 | 8 | 15 | 15 | 1 | 01/2011 |
| 01764 | | | Pa | WHBODY | PM | 41 | 87 | 136 | 41 | 87 | 136 | 41 | 87 | 136 | 41 | 87 | 136 | 1 | 01/2011 |
| 01765 | | | Pa | WHBODY | PM | 42 | 92 | 144 | 42 | 92 | 144 | 42 | 92 | 144 | 42 | 92 | 144 | 1 | 01/2011 |
| 01766 | | | Pa | WHBODY | PB | 9 | 95 | 182 | 9 | 95 | 182 | 9 | 95 | 182 | 9 | 95 | 182 | 1 | 01/2011 |
| | | | | | P | 9 | 95 | 8 | | | | | | | | | | | |
| | | | | | BH | | | 174 | | | | | | | | | | | |
| 01767 | | | Pa | WHBODY | PB | 29 | 67 | 128 | 29 | 67 | 128 | 29 | 67 | 128 | 29 | 67 | 128 | 1 | 01/2011 |
| | | | | | P | 29 | 67 | 28 | | | | | | | | | | | |
| | | | | | BH | | | 100 | | | | | | | | | | | |
| 01768 | | | Pa | WHBODY | PM | 47 | 46 | 65 | 47 | 46 | 65 | 47 | 46 | 65 | 47 | 46 | 65 | 1 | 01/2011 |
| 01769 | | | Pa | WHBODY | PM | 49 | 57 | 88 | 49 | 57 | 88 | 49 | 57 | 88 | 49 | 57 | 88 | 1 | 01/2011 |

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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 1119580310 | 07/21/2011 | 07/14/2011 | 5 |

| Part # / ID Number | Name / Birth Date | Sex | Dosimeter | Use | Radiation Quality | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 04/01/2011 - 06/30/2011 | | | Quarter 2 | | | 2011 | | | | | | | |
| 01770 | | | Pa | WHBODY | PM | 36 | 82 | 124 | 36 | 82 | 124 | 36 | 82 | 124 | 36 | 82 | 124 | 1 | 01/2011 |
| 01771 | | | Pa | WHBODY | PM | 62 | 61 | 67 | 62 | 61 | 67 | 62 | 61 | 67 | 62 | 61 | 67 | 1 | 01/2011 |
| 01772 | | | Pa | WHBODY | PB | 3 | 17 | 35 | 3 | 17 | 35 | 3 | 17 | 35 | 3 | 17 | 35 | 1 | 01/2011 |
| | | | | | P | 3 | 17 | 2 | | | | | | | | | | | |
| | | | | | B | | | 33 | | | | | | | | | | | |
| 01773 | | | Pa | WHBODY | PM | 46 | 61 | 76 | 46 | 61 | 76 | 46 | 61 | 76 | 46 | 61 | 76 | 1 | 01/2011 |
| 01774 | | | Pa | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 1 | 01/2011 |
| 01775 | | | Pa | WHBODY | PM | 63 | 62 | 77 | 63 | 62 | 77 | 63 | 62 | 77 | 63 | 62 | 77 | 1 | 01/2011 |
| 01776 | | | Pa | WHBODY | PM | 67 | 78 | 118 | 67 | 78 | 118 | 67 | 78 | 118 | 67 | 78 | 118 | 1 | 01/2011 |
| 01777 | | | Pa | WHBODY | PM | 63 | 78 | 117 | 63 | 78 | 117 | 63 | 78 | 117 | 63 | 78 | 117 | 1 | 01/2011 |
| 01778 | | | Pa | WHBODY | P | 4 | 3 | 2 | 4 | 3 | 2 | 4 | 3 | 2 | 4 | 3 | 2 | 1 | 01/2011 |
| 01779 | | | Pa | WHBODY | PM | 37 | 42 | 65 | 37 | 42 | 65 | 37 | 42 | 65 | 37 | 42 | 65 | 1 | 01/2011 |
| 01780 | | | Pa | WHBODY | PB | 8 | 29 | 59 | 8 | 29 | 59 | 8 | 29 | 59 | 8 | 29 | 59 | 1 | 01/2011 |
| | | | | | P | 8 | 29 | 7 | | | | | | | | | | | |
| | | | | | BH | | | 52 | | | | | | | | | | | |

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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 1119580310 | 07/21/2011 | 07/14/2011 | 5 |

| Part # / Name / ID Number | Birth Date | Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 04/01/2011 - 06/30/2011 | | | Quarter 2 | | | 2011 | | | | | | | |
| 01781 | | | Pa | WHBODY | PM | 50 | 54 | 84 | 50 | 54 | 84 | 50 | 54 | 84 | 50 | 54 | 84 | 1 | 01/2011 |
| 01782 | | | Pa | WHBODY | PM | 83 | 82 | 77 | 83 | 82 | 77 | 83 | 82 | 77 | 83 | 82 | 77 | 1 | 01/2011 |
| 01783 | | | Pa | WHBODY | PM | 67 | 73 | 80 | 67 | 73 | 80 | 67 | 73 | 80 | 67 | 73 | 80 | 1 | 01/2011 |

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|---|---|---|---|---|---|
| [redacted] | APG | 9700100004 | 01/17/2012 | | |

| Part # / ID Number | Name / Birth Date | Sex | Dosimeter | Use | Radiation Quality | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 04/01/2011 - 06/30/2011 | | | Quarter 2 | | | 2011 | | | | | | | |
| [redacted] | | | | | | | | | | | | | | | | | | | |
| [redacted] | | | | | | | | | | | | | | | | | | | |
| [redacted] | | | | | | | | | | | | | | | | | | | |
| [redacted] | | | | | | | | | | | | | | | | | | | |
| [redacted] | | | | | | | | | | | | | | | | | | | |
| [redacted] | | | | | | | | | | | | | | | | | | | |
| 01760 | | P | WHBODY | P | | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 5 | 01/2011 |
| | | | NOTE | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01761 | | P | WHBODY | P | | 51 | 55 | 55 | 51 | 55 | 55 | 51 | 55 | 55 | 51 | 55 | 55 | 5 | 01/2011 |
| | | | NOTE | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01762 | | P | WHBODY | P | | 40 | 44 | 45 | 40 | 44 | 45 | 40 | 44 | 45 | 40 | 44 | 45 | 5 | 01/2011 |
| | | | NOTE | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01763 | | P | WHBODY | P | | 9 | 8 | 8 | 9 | 8 | 8 | 9 | 8 | 8 | 9 | 8 | 8 | 5 | 01/2011 |
| | | | NOTE | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01764 | | P | WHBODY | P | | 62 | 69 | 70 | 62 | 69 | 70 | 62 | 69 | 70 | 62 | 69 | 70 | 5 | 01/2011 |
| | | | NOTE | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01765 | | P | WHBODY | P | | 69 | 78 | 81 | 69 | 78 | 81 | 69 | 78 | 81 | 69 | 78 | 81 | 5 | 01/2011 |
| | | | NOTE | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

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Quality Control Release: RQR 1 PR 9928 RPT130 N1 D0001



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[redacted]

| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 9700100004 | 01/17/2012 | | |

| Part # / Name / ID Number | Birth Date | Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 04/01/2011 - 06/30/2011 | | | Quarter 2 | | | 2011 | | | | | | | |
| 01766 | | | P | WHBODY | P | 40 | 42 | 42 | 40 | 42 | 42 | 40 | 42 | 42 | 40 | 42 | 42 | 5 | 01/2011 |
| NOTE | | | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01767 | | | P | WHBODY | P | 36 | 39 | 39 | 36 | 39 | 39 | 36 | 39 | 39 | 36 | 39 | 39 | 5 | 01/2011 |
| NOTE | | | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01768 | | | P | WHBODY | P | 38 | 42 | 42 | 38 | 42 | 42 | 38 | 42 | 42 | 38 | 42 | 42 | 5 | 01/2011 |
| NOTE | | | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01769 | | | P | WHBODY | P | 43 | 45 | 45 | 43 | 45 | 45 | 43 | 45 | 45 | 43 | 45 | 45 | 5 | 01/2011 |
| NOTE | | | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01770 | | | P | WHBODY | P | 59 | 66 | 67 | 59 | 66 | 67 | 59 | 66 | 67 | 59 | 66 | 67 | 5 | 01/2011 |
| NOTE | | | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01771 | | | P | WHBODY | P | 52 | 57 | 58 | 52 | 57 | 58 | 52 | 57 | 58 | 52 | 57 | 58 | 5 | 01/2011 |
| NOTE | | | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01772 | | | P | WHBODY | P | 5 | 3 | 3 | 5 | 3 | 3 | 5 | 3 | 3 | 5 | 3 | 3 | 5 | 01/2011 |
| NOTE | | | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01773 | | | P | WHBODY | P | 54 | 58 | 58 | 54 | 58 | 58 | 54 | 58 | 58 | 54 | 58 | 58 | 5 | 01/2011 |
| NOTE | | | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01774 | | | P | WHBODY | P | 7 | 5 | 5 | 7 | 5 | 5 | 7 | 5 | 5 | 7 | 5 | 5 | 4 | 01/2011 |
| NOTE | | | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01775 | | | P | WHBODY | P | 52 | 57 | 57 | 52 | 57 | 57 | 52 | 57 | 57 | 52 | 57 | 57 | 5 | 01/2011 |
| NOTE | | | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01776 | | | P | WHBODY | P | 69 | 76 | 78 | 69 | 76 | 78 | 69 | 76 | 78 | 69 | 76 | 78 | 5 | 01/2011 |
| NOTE | | | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01777 | | | P | WHBODY | P | 68 | 75 | 76 | 68 | 75 | 76 | 68 | 75 | 76 | 68 | 75 | 76 | 5 | 01/2011 |
| NOTE | | | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

M: MINIMAL REPORTING SERVICE OF 1 MREM

Quality Control Release: RQR 1 PR 9928 RPT130 N1 D0001



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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 9700100004 | 01/17/2012 | | |

| Part # / Name / ID Number / Birth Date / Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | 04/01/2011 - 06/30/2011 | | | Quarter 2 | | | 2011 | | | | | | | |
| 01778 | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 5 | 01/2011 |
| | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01779 | P | WHBODY | P | 36 | 40 | 40 | 36 | 40 | 40 | 36 | 40 | 40 | 36 | 40 | 40 | 5 | 01/2011 |
| | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01780 | P | WHBODY | P | 10 | 8 | 8 | 10 | 8 | 8 | 10 | 8 | 8 | 10 | 8 | 8 | 5 | 01/2011 |
| | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01781 | P | WHBODY | P | 45 | 48 | 48 | 45 | 48 | 48 | 45 | 48 | 48 | 45 | 48 | 48 | 5 | 01/2011 |
| | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01782 | P | WHBODY | P | 73 | 79 | 80 | 73 | 79 | 80 | 73 | 79 | 80 | 73 | 79 | 80 | 5 | 01/2011 |
| | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01783 | P | WHBODY | P | 72 | 78 | 79 | 72 | 78 | 79 | 72 | 78 | 79 | 72 | 78 | 79 | 5 | 01/2011 |
| | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| [redacted] | | | | | | | | | | | | | | | | | |

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Quality Control Release: RQR 1 PR 9928 RPT130 N1 D0001



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Radn Prot Consult No. 26-MF-0E7K-11, Rapiscan Secure 1000 SP Dosimetry Study, TSA, Arlington, VA, 21 Apr 10 - 17 Aug 11

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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | PBI | 9700100003 | 12/17/2010 | | |

| Part # / ID Number | Name / Birth Date | Sex | Dos meter | Use | Rad at on / Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 04/01/2010 - 06/30/2010 | | | Quarter 2 | | | 2010 | | | | | | | |
| 00PBI | CONTROL | | | ASSIGN | | M | M | M | | | | | | | | | | 3 | / |
| | | | Pa | CHEST | | M | M | M | | | | | | | | | | | 05/2009 |
| | | | Pa | CHEST | | M | M | M | | | | | | | | | | | 05/2009 |
| 00437 | SPARE | | Pa | WHBODY | PB | M | 8 | 30 | 1 | 8 | 31 | 1 | 8 | 31 | 1 | 8 | 31 | 1 | 04/2009 |
| | | | | | P | M | 8 | M | | | | | | | | | | | |
| | | | | | B | | | 30 | | | | | | | | | | | |
| 00438 | SPARE | | Pa | WHBODY | P | 4 | 4 | 9 | 4 | 4 | 9 | 4 | 4 | 9 | 4 | 4 | 9 | 1 | 04/2009 |
| 00439 | SPARE | | Pa | WHBODY | PB | M | 12 | 28 | 1 | 12 | 29 | 1 | 12 | 29 | 1 | 12 | 29 | 1 | 04/2009 |
| | | | | | P | M | 12 | M | | | | | | | | | | | |
| | | | | | BH | | | 28 | | | | | | | | | | | |
| 00440 | SPARE | | Pa | WHBODY | P | 3 | 7 | 15 | 3 | 7 | 15 | 3 | 7 | 15 | 3 | 7 | 15 | 1 | 04/2009 |
| 00441 | SPARE | | Pa | WHBODY | P | 5 | 14 | 23 | 5 | 14 | 23 | 5 | 14 | 23 | 5 | 14 | 23 | 1 | 04/2009 |
| 00442 | SPARE | | Pa | WHBODY | P | 5 | 14 | 23 | 5 | 14 | 23 | 5 | 14 | 23 | 5 | 14 | 23 | 1 | 04/2009 |
| 00443 | SPARE | | Pa | WHBODY | P | M | 3 | 7 | 1 | 3 | 7 | 1 | 3 | 7 | 1 | 3 | 7 | 1 | 04/2009 |
| 00444 | SPARE | | Pa | WHBODY | | M | M | M | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 04/2009 |
| 00445 | SPARE | | Pa | WHBODY | | M | M | M | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 04/2009 |
| 00446 | SPARE | | Pa | WHBODY | P | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 1 | 04/2009 |

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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | PBI | 9700100003 | 12/17/2010 | | |

| Part # / Name / ID Number | Birth Date | Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 04/01/2010 - 06/30/2010 | | | Quarter 2 | | | 2010 | | | | | | | |
| 00447 SPARE | | | Pa | WHBODY | PB | 1 | 11 | 21 | 1 | 11 | 21 | 1 | 11 | 21 | 1 | 11 | 21 | 1 | 04/2009 |
| | | | | | P | 1 | 11 | 2 | | | | | | | | | | | |
| | | | | | B | | | 19 | | | | | | | | | | | |
| 00448 SPARE | | | Pa | WHBODY | P | M | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 04/2009 |

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|---|---|---|---|---|---|
| [redacted] | PBI | 9700100004 | 01/17/2012 | | |

| Part # / ID Number | Name / Birth Date | Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 04/01/2010 - 06/30/2010 | | | Quarter 2 | | | 2010 | | | | | | | |
| 00437 | SPARE | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 2 | 04/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 00438 | SPARE | | P | WHBODY | P | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 04/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 00439 | SPARE | | P | WHBODY | P | 3 | 2 | 2 | 3 | 2 | 2 | 3 | 2 | 2 | 3 | 2 | 2 | 2 | 04/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 00440 | SPARE | | P | WHBODY | P | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 04/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 00441 | SPARE | | P | WHBODY | P | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 2 | 04/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 00442 | SPARE | | P | WHBODY | P | 8 | 7 | 7 | 8 | 7 | 7 | 8 | 7 | 7 | 8 | 7 | 7 | 2 | 04/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 00443 | SPARE | | P | WHBODY | P | 1 | M | M | 1 | M | M | 1 | M | M | 1 | M | M | 2 | 04/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 00444 | SPARE | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 2 | 04/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 00445 | SPARE | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 2 | 04/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 00446 | SPARE | | P | WHBODY | P | 1 | M | M | 1 | M | M | 1 | M | M | 1 | M | M | 2 | 04/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 00447 | SPARE | | P | WHBODY | P | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 2 | 04/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 00448 | SPARE | | P | WHBODY | P | 1 | M | M | 1 | M | M | 1 | M | M | 1 | M | M | 2 | 04/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

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Quality Control Release: RQR 1 PR 9928 RPT130 N1 D0001



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Radn Prot Consult No. 26-MF-0E7K-11, Rapiscan Secure 1000 SP Dosimetry Study, TSA, Arlington, VA, 21 Apr 10 - 17 Aug 11

Cincinnati/Northern Kentucky International Airport (CVG) Data Set #2 Dosimetry Report

Default Algorithm

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|---|---|---|---|---|---|
| [redacted] | PHL | 1026580001 | 09/29/2010 | 09/22/2010 | 5 |

| Part # | Name | | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below | | | Quarterly Accumulated Dose Equivalent (MREM) | | | Year to Date Dose Equivalent (MREM) | | | Lifetime Dose Equivalent (MREM) | | | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID Number | Birth Date | Sex | | | | Deep DDE | Eye LDE | Shallow SDE | Deep DDE | Eye LDE | Shallow SDE | Deep DDE | Eye LDE | Shallow SDE | Deep DDE | Eye LDE | Shallow SDE | | |
| For Monitoring Period: | | | | | | 07/01/2010 - 09/30/2010 | | | Quarter 3 | | | 2010 | | | | | | | |
| 00PHL | CONTROL | | Pa | CNTRL | | M | M | M | | | | | | | | | | 5 | 04/2009 |
| 01469 | SPARE | | Pa | WHBODY | P | 17 | 17 | 14 | 17 | 17 | 14 | 17 | 17 | 14 | 17 | 17 | 14 | 1 | 07/2010 |
| 01470 | SPARE | | Pa | WHBODY | P | 10 | 10 | 16 | 10 | 10 | 16 | 10 | 10 | 16 | 10 | 10 | 16 | 1 | 07/2010 |
| 01471 | SPARE | | Pa | WHBODY | PB | 9 | 24 | 44 | 9 | 24 | 44 | 9 | 24 | 44 | 9 | 24 | 44 | 1 | 07/2010 |
| | | | | | P | 9 | 24 | 8 | | | | | | | | | | | |
| | | | | | B | | | 36 | | | | | | | | | | | |
| 01472 | SPARE | | Pa | WHBODY | P | 13 | 18 | 26 | 13 | 18 | 26 | 13 | 18 | 26 | 13 | 18 | 26 | 1 | 07/2010 |
| 01473 | SPARE | | Pa | WHBODY | PB | 18 | 38 | 67 | 18 | 38 | 67 | 18 | 38 | 67 | 18 | 38 | 67 | 1 | 07/2010 |
| | | | | | P | 18 | 38 | 17 | | | | | | | | | | | |
| | | | | | BH | | | 50 | | | | | | | | | | | |
| 01474 | SPARE | | Pa | WHBODY | PB | 16 | 40 | 66 | 16 | 40 | 66 | 16 | 40 | 66 | 16 | 40 | 66 | 1 | 07/2010 |
| | | | | | P | 16 | 40 | 15 | | | | | | | | | | | |
| | | | | | BH | | | 51 | | | | | | | | | | | |
| 01475 | SPARE | | Pa | WHBODY | P | M | 1 | 4 | M | 1 | 4 | M | 1 | 4 | M | 1 | 4 | 1 | 07/2010 |
| 01476 | SPARE | | Pa | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 1 | 07/2010 |
| 01477 | SPARE | | Pa | WHBODY | P | M | 1 | 5 | M | 1 | 5 | M | 1 | 5 | M | 1 | 5 | 1 | 07/2010 |
| 01478 | SPARE | | Pa | WHBODY | P | M | M | 1 | M | M | 1 | M | M | 1 | M | M | 1 | 1 | 07/2010 |

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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | PHL | 1026580001 | 09/29/2010 | 09/22/2010 | 5 |

| Part # / Name / ID Number | Birth Date | Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 07/01/2010 - 09/30/2010 | | | Quarter 3 | | | 2010 | | | | | | | |
| 01479 SPARE | | | Pa | WHBODY | P | M | 1 | 3 | M | 1 | 3 | M | 1 | 3 | M | 1 | 3 | 1 | 07/2010 |
| 01480 SPARE | | | Pa | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 1 | 07/2010 |

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|---|---|---|---|---|---|
| [redacted] | PHL | 9700100004 | 01/17/2012 | | |

| Part # / ID Number | Name / Birth Date | Sex | Dosimeter | Use | Radiation Quality | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 07/01/2010 - 09/30/2010 | | | Quarter 3 | | | 2010 | | | | | | | |
| 01469 | SPARE | | P | WHBODY | P | 6 | 9 | 9 | 6 | 9 | 9 | 6 | 9 | 9 | 6 | 9 | 9 | 3 | 07/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01470 | SPARE | | P | WHBODY | P | 7 | 10 | 10 | 7 | 10 | 10 | 7 | 10 | 10 | 7 | 10 | 10 | 3 | 07/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01471 | SPARE | | P | WHBODY | P | 12 | 14 | 14 | 12 | 14 | 14 | 12 | 14 | 14 | 12 | 14 | 14 | 3 | 07/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01472 | SPARE | | P | WHBODY | P | 14 | 17 | 17 | 14 | 17 | 17 | 14 | 17 | 17 | 14 | 17 | 17 | 3 | 07/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01473 | SPARE | | P | WHBODY | P | 24 | 28 | 28 | 24 | 28 | 28 | 24 | 28 | 28 | 24 | 28 | 28 | 3 | 07/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01474 | SPARE | | P | WHBODY | P | 24 | 28 | 28 | 24 | 28 | 28 | 24 | 28 | 28 | 24 | 28 | 28 | 3 | 07/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01475 | SPARE | | P | WHBODY | P | M | 1 | 1 | M | 1 | 1 | M | 1 | 1 | M | 1 | 1 | 3 | 07/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01476 | SPARE | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 2 | 07/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01477 | SPARE | | P | WHBODY | P | M | 1 | 1 | M | 1 | 1 | M | 1 | 1 | M | 1 | 1 | 3 | 07/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01478 | SPARE | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 3 | 07/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01479 | SPARE | | P | WHBODY | P | M | 1 | 1 | M | 1 | 1 | M | 1 | 1 | M | 1 | 1 | 3 | 07/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01480 | SPARE | | P | WHBODY | P | M | 1 | 1 | M | 1 | 1 | M | 1 | 1 | M | 1 | 1 | 2 | 07/2010 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

M: MINIMAL REPORTING SERVICE OF 1 MREM

Quality Control Release: RQR 1 PR 9928 RPT130 N1 D0001

Los Angeles International Airport (LAX) Data Set #1 Dosimetry Report

Default Algorithm

Electronic Representation

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[redacted]

| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | LAX | 9700100003 | 08/12/2011 | | |

| Part # / ID Number | Name / Birth Date | Sex | Dosimeter | Use | Radiation Quality | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 04/01/2010 - 06/30/2010 | | | Quarter 2 | | | 2010 | | | | | | | |
| 00839 | SPARE | | Pa | WHBODY | PL | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 2 | 07/2009 |
| 00840 | SPARE | | Pa | WHBODY | PL | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 2 | 07/2009 |
| 00841 | SPARE | | Pa | WHBODY | PM | 29 | 29 | 24 | 29 | 29 | 24 | 29 | 29 | 24 | 29 | 29 | 24 | 2 | 07/2009 |
| 00842 | SPARE | | Pa | WHBODY | PB | 25 | 53 | 91 | 25 | 53 | 91 | 25 | 53 | 91 | 25 | 53 | 91 | 2 | 07/2009 |
| | | | | | P | 25 | 53 | 25 | | | | | | | | | | | |
| | | | | | BH | | | 66 | | | | | | | | | | | |
| 00843 | SPARE | | Pa | WHBODY | PM | 48 | 69 | 104 | 48 | 69 | 104 | 48 | 69 | 104 | 48 | 69 | 104 | 2 | 07/2009 |
| 00844 | SPARE | | Pa | WHBODY | PL | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 2 | 07/2009 |
| 00845 | SPARE | | Pa | WHBODY | PM | 33 | 47 | 60 | 33 | 47 | 60 | 33 | 47 | 60 | 33 | 47 | 60 | 2 | 07/2009 |
| 00846 | SPARE | | Pa | WHBODY | PB | 29 | 42 | 63 | 29 | 42 | 63 | 29 | 42 | 63 | 29 | 42 | 63 | 2 | 07/2009 |
| | | | | | P | 29 | 42 | 29 | | | | | | | | | | | |
| | | | | | BH | | | 34 | | | | | | | | | | | |
| 00847 | SPARE | | Pa | WHBODY | PB | 13 | 45 | 77 | 13 | 45 | 77 | 13 | 45 | 77 | 13 | 45 | 77 | 2 | 07/2009 |
| | | | | | P | 13 | 45 | 13 | | | | | | | | | | | |
| | | | | | BH | | | 64 | | | | | | | | | | | |
| 00848 | SPARE | | Pa | WHBODY | PB | 18 | 55 | 96 | 18 | 55 | 96 | 18 | 55 | 96 | 18 | 55 | 96 | 2 | 07/2009 |
| | | | | | P | 18 | 55 | 18 | | | | | | | | | | | |
| | | | | | BH | | | 78 | | | | | | | | | | | |

M: MINIMAL REPORTING SERVICE OF 1 MREM

Quality Control Release: RQR 1 PR 9821 RPT131 N1 C0001



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[redacted]

| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | LAX | 9700100003 | 08/12/2011 | | |

| Part # / ID Number | Name / Birth Date | Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 04/01/2010 - 06/30/2010 | | | Quarter 2 | | | 2010 | | | | | | | |
| 00849 | SPARE | | Pa | WHBODY | PB | 23 | 76 | 122 | 23 | 76 | 122 | 23 | 76 | 122 | 23 | 76 | 122 | 2 | 07/2009 |
| | | | | | P | 23 | 76 | 23 | | | | | | | | | | | |
| | | | | | BH | | | 99 | | | | | | | | | | | |
| 00850 | SPARE | | Pa | WHBODY | PB | 30 | 57 | 93 | 30 | 57 | 93 | 30 | 57 | 93 | 30 | 57 | 93 | 2 | 07/2009 |
| | | | | | P | 30 | 57 | 30 | | | | | | | | | | | |
| | | | | | BH | | | 63 | | | | | | | | | | | |

M: MINIMAL REPORTING SERVICE OF 1 MREM

Quality Control Release: RQR 1 PR 9821 RPT131 N1 C0001



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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | LAX | 9700100004 | 01/17/2012 | | |

| Part # / ID Number | Name / Birth Date | Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 04/01/2010 - 06/30/2010 | | | Quarter 2 | | | 2010 | | | | | | | |
| 00839 | SPARE | | P | WHBODY | P | 22 | 19 | 19 | 22 | 19 | 19 | 22 | 19 | 19 | 22 | 19 | 19 | 4 | 07/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 00840 | SPARE | | P | WHBODY | P | 22 | 19 | 19 | 22 | 19 | 19 | 22 | 19 | 19 | 22 | 19 | 19 | 4 | 07/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 00841 | SPARE | | P | WHBODY | P | 21 | 17 | 17 | 21 | 17 | 17 | 21 | 17 | 17 | 21 | 17 | 17 | 4 | 07/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 00842 | SPARE | | P | WHBODY | P | 23 | 21 | 21 | 23 | 21 | 21 | 23 | 21 | 21 | 23 | 21 | 21 | 4 | 07/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 00843 | SPARE | | P | WHBODY | P | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 4 | 07/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 00844 | SPARE | | P | WHBODY | P | 28 | 26 | 26 | 28 | 26 | 26 | 28 | 26 | 26 | 28 | 26 | 26 | 4 | 07/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 00845 | SPARE | | P | WHBODY | P | 29 | 26 | 26 | 29 | 26 | 26 | 29 | 26 | 26 | 29 | 26 | 26 | 4 | 07/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 00846 | SPARE | | P | WHBODY | P | 22 | 20 | 20 | 22 | 20 | 20 | 22 | 20 | 20 | 22 | 20 | 20 | 4 | 07/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 00847 | SPARE | | P | WHBODY | P | 16 | 14 | 14 | 16 | 14 | 14 | 16 | 14 | 14 | 16 | 14 | 14 | 4 | 07/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 00848 | SPARE | | P | WHBODY | P | 22 | 19 | 19 | 22 | 19 | 19 | 22 | 19 | 19 | 22 | 19 | 19 | 4 | 07/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 00849 | SPARE | | P | WHBODY | P | 34 | 32 | 32 | 34 | 32 | 32 | 34 | 32 | 32 | 34 | 32 | 32 | 4 | 07/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 00850 | SPARE | | P | WHBODY | P | 28 | 27 | 27 | 28 | 27 | 27 | 28 | 27 | 27 | 28 | 27 | 27 | 4 | 07/2009 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

M: MINIMAL REPORTING SERVICE OF 1 MREM

Quality Control Release: RQR 1 PR 9928 RPT130 N1 D0001



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Los Angeles International Airport (LAX) Data Set #2 Dosimetry Report

Default Algorithm

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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 1122150091 | 08/16/2011 | 08/09/2011 | 5 |

| Part # / ID Number | Name / Birth Date | Sex | Dosimeter | Use | Radiation Quality | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 04/01/2011 - 06/30/2011 | | | Quarter 2 | | | 2011 | | | | | | | |
| 00APG | CONTROL | | Pa | CNTRL | | M | M | M | | | | | | | | | | 5 | 04/2009 |
| | | | Pa | CNTRL | | M | M | M | | | | | | | | | | | 04/2009 |
| | | | Pa | CNTRL | | M | M | M | | | | | | | | | | | 04/2009 |
| 01785 | | | Pa | WHBODY | PM | 53 | 68 | 100 | 53 | 68 | 100 | 53 | 68 | 100 | 53 | 68 | 100 | 3 | 01/2011 |
| 01786 | | | Pa | WHBODY | PM | 60 | 60 | 56 | 60 | 60 | 56 | 60 | 60 | 56 | 60 | 60 | 56 | 3 | 01/2011 |
| 01787 | | | Pa | WHBODY | PB | 34 | 96 | 159 | 34 | 96 | 159 | 34 | 96 | 159 | 34 | 96 | 159 | 3 | 01/2011 |
| | | | | | P | 34 | 96 | 35 | | | | | | | | | | | |
| | | | | | BH | | | 124 | | | | | | | | | | | |
| 01788 | | | Pa | WHBODY | PB | 10 | 94 | 186 | 10 | 94 | 186 | 10 | 94 | 186 | 10 | 94 | 186 | 3 | 01/2011 |
| | | | | | P | 10 | 94 | 11 | | | | | | | | | | | |
| | | | | | BH | | | 175 | | | | | | | | | | | |
| 01789 | | | Pa | WHBODY | PM | 75 | 91 | 155 | 75 | 91 | 155 | 75 | 91 | 155 | 75 | 91 | 155 | 3 | 01/2011 |
| 01790 | | | Pa | WHBODY | PM | 86 | 118 | 149 | 86 | 118 | 149 | 86 | 118 | 149 | 86 | 118 | 149 | 3 | 01/2011 |
| 01791 | | | Pa | WHBODY | PB | 22 | 52 | 103 | 22 | 52 | 103 | 22 | 52 | 103 | 22 | 52 | 103 | 3 | 01/2011 |
| | | | | | P | 22 | 52 | 23 | | | | | | | | | | | |
| | | | | | BH | | | 80 | | | | | | | | | | | |
| 01792 | | | Pa | WHBODY | P | 28 | 28 | 25 | 28 | 28 | 25 | 28 | 28 | 25 | 28 | 28 | 25 | 3 | 01/2011 |
| 01793 | | | Pa | WHBODY | PM | 25 | 46 | 72 | 25 | 46 | 72 | 25 | 46 | 72 | 25 | 46 | 72 | 3 | 01/2011 |

M: MINIMAL REPORTING SERVICE OF 1 MREM

Quality Control Release: SEB 1 PR 9823 RPT131 N1 22191



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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 1122150091 | 08/16/2011 | 08/09/2011 | 5 |

| Part # / ID Number | Name / Birth Date | Sex | Dosimeter | Use | Radiation Quality | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 04/01/2011 - 06/30/2011 | | | Quarter 2 | | | 2011 | | | | | | | |
| 01794 | | | Pa | WHBODY | P | 3 | 3 | 4 | 3 | 3 | 4 | 3 | 3 | 4 | 3 | 3 | 4 | 3 | 01/2011 |
| 01795 | | | Pa | WHBODY | PM | 50 | 52 | 67 | 50 | 52 | 67 | 50 | 52 | 68 | 50 | 52 | 68 | 3 | 01/2011 |
| 01796 | | | Pa | WHBODY | PB | 24 | 60 | 96 | 24 | 60 | 96 | 24 | 60 | 96 | 24 | 60 | 96 | 3 | 01/2011 |
| | | | | | P | 24 | 60 | 25 | | | | | | | | | | | |
| | | | | | BH | | | 71 | | | | | | | | | | | |
| 01797 | | | Pa | WHBODY | PM | 59 | 59 | 55 | 59 | 59 | 55 | 59 | 59 | 55 | 59 | 59 | 55 | 3 | 01/2011 |
| 01798 | | | Pa | WHBODY | P | 25 | 25 | 22 | 25 | 25 | 22 | 25 | 25 | 22 | 25 | 25 | 22 | 3 | 01/2011 |
| 01799 | | | Pa | WHBODY | PM | 30 | 64 | 101 | 30 | 64 | 101 | 30 | 64 | 101 | 30 | 64 | 101 | 3 | 01/2011 |
| 01800 | | | Pa | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 3 | 01/2011 |
| 01801 | | | Pa | WHBODY | PB | 42 | 103 | 163 | 42 | 103 | 163 | 42 | 103 | 163 | 42 | 103 | 163 | 3 | 01/2011 |
| | | | | | P | 42 | 103 | 43 | | | | | | | | | | | |
| | | | | | BH | | | 120 | | | | | | | | | | | |
| 01802 | | | Pa | WHBODY | PM | 34 | 90 | 136 | 34 | 90 | 136 | 34 | 90 | 136 | 34 | 90 | 136 | 3 | 01/2011 |
| 01803 | | | Pa | WHBODY | PB | 35 | 117 | 191 | 35 | 117 | 191 | 35 | 117 | 191 | 35 | 117 | 191 | 3 | 01/2011 |
| | | | | | P | 35 | 117 | 36 | | | | | | | | | | | |
| | | | | | BH | | | 155 | | | | | | | | | | | |
| 01804 | | | Pa | WHBODY | PM | 63 | 63 | 59 | 63 | 63 | 59 | 63 | 63 | 59 | 63 | 63 | 59 | 3 | 01/2011 |

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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 1122150091 | 08/16/2011 | 08/09/2011 | 5 |

| Part # / Name / ID Number / Birth Date / Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | 04/01/2011 - 06/30/2011 | | | Quarter 2 | | | 2011 | | | | | | | | |
| 01805 | Pa | WHBODY | PM | 60 | 79 | 132 | 60 | 79 | 132 | 60 | 79 | 132 | 60 | 79 | 132 | 3 | 01/2011 |
| 01806 | Pa | WHBODY | PM | 68 | 82 | 113 | 68 | 82 | 113 | 68 | 82 | 113 | 68 | 82 | 113 | 3 | 01/2011 |
| 01807 | Pa | WHBODY | PB | 74 | 177 | 291 | 74 | 177 | 291 | 74 | 177 | 291 | 74 | 177 | 291 | 3 | 01/2011 |
| | | | P | 74 | 177 | 75 | | | | | | | | | | | |
| | | | BH | | | 216 | | | | | | | | | | | |
| 01808 | Pa | WHBODY | PM | 100 | 130 | 179 | 100 | 130 | 179 | 100 | 130 | 179 | 100 | 130 | 179 | 3 | 01/2011 |

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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 9700100004 | 01/17/2012 | | |

| Part # / ID Number | Name / Birth Date | Sex | Dosimeter | Use | Radiation Quality | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 04/01/2011 - 06/30/2011 | | | Quarter 2 | | | 2011 | | | | | | | |
| [redacted] | | | | | | | | | | | | | | | | | | | |
| [redacted] | | | | | | | | | | | | | | | | | | | |
| [redacted] | | | | | | | | | | | | | | | | | | | |
| [redacted] | | | | | | | | | | | | | | | | | | | |
| [redacted] | | | | | | | | | | | | | | | | | | | |
| [redacted] | | | | | | | | | | | | | | | | | | | |
| 01785 | | P | WHBODY | P | | 58 | 65 | 66 | 58 | 65 | 66 | 58 | 65 | 66 | 58 | 65 | 66 | 5 | 01/2011 |
| | | | NOTE | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01786 | | P | WHBODY | P | | 42 | 47 | 48 | 42 | 47 | 48 | 42 | 47 | 48 | 42 | 47 | 48 | 5 | 01/2011 |
| | | | NOTE | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01787 | | P | WHBODY | P | | 62 | 69 | 70 | 62 | 69 | 70 | 62 | 69 | 70 | 62 | 69 | 70 | 5 | 01/2011 |
| | | | NOTE | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01788 | | P | WHBODY | P | | 37 | 39 | 39 | 37 | 39 | 39 | 37 | 39 | 39 | 37 | 39 | 39 | 5 | 01/2011 |
| | | | NOTE | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01789 | | P | WHBODY | P | | 72 | 80 | 82 | 72 | 80 | 82 | 72 | 80 | 82 | 72 | 80 | 82 | 5 | 01/2011 |
| | | | NOTE | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01790 | | P | WHBODY | P | | 108 | 119 | 121 | 108 | 119 | 121 | 108 | 119 | 121 | 108 | 119 | 121 | 5 | 01/2011 |
| | | | NOTE | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

M: MINIMAL REPORTING SERVICE OF 1 MREM

Quality Control Release: RQR 1 PR 9928 RPT130 N1 D0001



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Electronic Representation

# Radiation Dosimetry Report

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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 9700100004 | 01/17/2012 | | |

| Part # / ID Number | Name / Birth Date | Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 04/01/2011 - 06/30/2011 | | | Quarter 2 | | | 2011 | | | | | | | |
| 01791 | | | P | WHBODY | P | 29 | 33 | 33 | 29 | 33 | 33 | 29 | 33 | 33 | 29 | 33 | 33 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01792 | | | P | WHBODY | P | 22 | 23 | 23 | 22 | 23 | 23 | 22 | 23 | 23 | 22 | 23 | 23 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01793 | | | P | WHBODY | P | 29 | 30 | 30 | 29 | 30 | 30 | 29 | 30 | 30 | 29 | 30 | 30 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01794 | | | P | WHBODY | P | 31 | 33 | 33 | 31 | 33 | 33 | 31 | 33 | 33 | 31 | 33 | 33 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01795 | | | P | WHBODY | P | 48 | 52 | 52 | 48 | 52 | 52 | 48 | 52 | 53 | 48 | 52 | 53 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01796 | | | P | WHBODY | P | 37 | 40 | 40 | 37 | 40 | 40 | 37 | 40 | 40 | 37 | 40 | 40 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01797 | | | P | WHBODY | P | 46 | 51 | 51 | 46 | 51 | 51 | 46 | 51 | 51 | 46 | 51 | 51 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01798 | | | P | WHBODY | P | 13 | 14 | 14 | 13 | 14 | 14 | 13 | 14 | 14 | 13 | 14 | 14 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01799 | | | P | WHBODY | P | 46 | 52 | 53 | 46 | 52 | 53 | 46 | 52 | 53 | 46 | 52 | 53 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01800 | | | P | WHBODY | P | 6 | 5 | 5 | 6 | 5 | 5 | 6 | 5 | 5 | 6 | 5 | 5 | 4 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01801 | | | P | WHBODY | P | 70 | 78 | 79 | 70 | 78 | 79 | 70 | 78 | 79 | 70 | 78 | 79 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01802 | | | P | WHBODY | P | 62 | 69 | 70 | 62 | 69 | 70 | 62 | 69 | 70 | 62 | 69 | 70 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

M: MINIMAL REPORTING SERVICE OF 1 MREM

Quality Control Release: RQR 1 PR 9928 RPT130 N1 D0001



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Electronic Representation

# Radiation Dosimetry Report

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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 9700100004 | 01/17/2012 | | |

| Part # / ID Number | Name / Birth Date | Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 04/01/2011 - 06/30/2011 | | | Quarter 2 | | | 2011 | | | | | | | |
| 01803 | | | P | WHBODY | P | 76 | 85 | 87 | 76 | 85 | 87 | 76 | 85 | 87 | 76 | 85 | 87 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01804 | | | P | WHBODY | P | 59 | 66 | 67 | 59 | 66 | 67 | 59 | 66 | 67 | 59 | 66 | 67 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01805 | | | P | WHBODY | P | 65 | 74 | 76 | 65 | 74 | 76 | 65 | 74 | 76 | 65 | 74 | 76 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01806 | | | P | WHBODY | P | 76 | 84 | 86 | 76 | 84 | 86 | 76 | 84 | 86 | 76 | 84 | 86 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01807 | | | P | WHBODY | P | 121 | 134 | 137 | 121 | 134 | 137 | 121 | 134 | 137 | 121 | 134 | 137 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01808 | | | P | WHBODY | P | 126 | 147 | 155 | 126 | 147 | 155 | 126 | 147 | 155 | 126 | 147 | 155 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

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Quality Control Release: RQR 1 PR 9928 RPT130 N1 D0001



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Chicago O'Hare International Airport (ORD) Data Set Dosimetry Report

Default Algorithm

Electronic Representation

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[redacted]

| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 1109580287 | 04/12/2011 | 04/05/2011 | 5 |

| Part # / Name / ID Number / Birth Date / Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | 01/01/2011 - 03/31/2011 | | | Quarter 1 | | | 2011 | | | | | | | |
| 00APG CONTROL | Pa | CNTRL | | M | M | M | | | | | | | | | | 1 | 04/2009 |
| 01711 | Pa | WHBODY | PB | 30 | 52 | 94 | 30 | 52 | 94 | 30 | 52 | 94 | 30 | 52 | 94 | 1 | 01/2011 |
| | | | P | 30 | 52 | 31 | | | | | | | | | | | |
| | | | BH | | | 63 | | | | | | | | | | | |
| 01712 | Pa | WHBODY | P | 2 | 2 | 3 | 2 | 2 | 3 | 2 | 2 | 3 | 2 | 2 | 3 | 1 | 01/2011 |
| 01713 | Pa | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 1 | 01/2011 |
| 01714 | Pa | WHBODY | P | 21 | 33 | 42 | 21 | 33 | 42 | 21 | 33 | 42 | 21 | 33 | 42 | 1 | 01/2011 |
| 01715 | Pa | WHBODY | PM | 48 | 52 | 82 | 48 | 52 | 82 | 48 | 52 | 82 | 48 | 52 | 82 | 1 | 01/2011 |
| 01716 | Pa | WHBODY | PM | 27 | 53 | 69 | 27 | 53 | 69 | 27 | 53 | 69 | 27 | 53 | 69 | 1 | 01/2011 |
| 01717 | Pa | WHBODY | PB | M | 21 | 42 | M | 21 | 42 | M | 21 | 42 | M | 21 | 42 | 1 | 01/2011 |
| | | | P | M | 21 | M | | | | | | | | | | | |
| | | | B | | | 42 | | | | | | | | | | | |
| 01718 | Pa | WHBODY | P | 8 | 30 | 45 | 8 | 30 | 45 | 8 | 30 | 45 | 8 | 30 | 45 | 1 | 01/2011 |
| 01719 | Pa | WHBODY | PB | M | 28 | 59 | M | 28 | 59 | M | 28 | 59 | M | 28 | 59 | 1 | 01/2011 |
| | | | P | M | 28 | M | | | | | | | | | | | |
| | | | BH | | | 59 | | | | | | | | | | | |
| 01720 | Pa | WHBODY | P | 15 | 24 | 36 | 15 | 24 | 36 | 15 | 24 | 36 | 15 | 24 | 36 | 1 | 01/2011 |

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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 1109580287 | 04/12/2011 | 04/05/2011 | 5 |

| Part # / Name / ID Number / Birth Date / Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | 01/01/2011 - 03/31/2011 | | | Quarter 1 | | | 2011 | | | | | | | |
| 01721 | Pa | WHBODY | PB | 15 | 52 | 84 | 15 | 52 | 84 | 15 | 52 | 84 | 15 | 52 | 84 | 1 | 01/2011 |
| | | | P | 15 | 52 | 16 | | | | | | | | | | | |
| | | | BH | | | 68 | | | | | | | | | | | |
| 01722 | Pa | WHBODY | PM | 16 | 41 | 63 | 16 | 41 | 63 | 16 | 41 | 63 | 16 | 41 | 63 | 1 | 01/2011 |
| 01723 | Pa | WHBODY | PB | 23 | 75 | 145 | 23 | 75 | 145 | 23 | 75 | 145 | 23 | 75 | 145 | 1 | 01/2011 |
| | | | P | 23 | 75 | 24 | | | | | | | | | | | |
| | | | BH | | | 121 | | | | | | | | | | | |
| 01724 | Pa | WHBODY | PM | 29 | 38 | 51 | 29 | 38 | 51 | 29 | 38 | 51 | 29 | 38 | 51 | 1 | 01/2011 |
| 01725 | Pa | WHBODY | PM | 40 | 46 | 72 | 40 | 46 | 72 | 40 | 46 | 72 | 40 | 46 | 72 | 1 | 01/2011 |
| 01726 | Pa | WHBODY | PM | 31 | 54 | 77 | 31 | 54 | 77 | 31 | 54 | 77 | 31 | 54 | 77 | 1 | 01/2011 |
| 01727 | Pa | WHBODY | PB | 33 | 95 | 162 | 33 | 95 | 162 | 33 | 95 | 162 | 33 | 95 | 162 | 1 | 01/2011 |
| | | | P | 33 | 95 | 34 | | | | | | | | | | | |
| | | | BH | | | 128 | | | | | | | | | | | |
| 01728 | Pa | WHBODY | PM | 37 | 66 | 101 | 37 | 66 | 101 | 37 | 66 | 101 | 37 | 66 | 101 | 1 | 01/2011 |
| 01729 | Pa | WHBODY | PB | 16 | 39 | 67 | 16 | 39 | 67 | 16 | 39 | 67 | 16 | 39 | 67 | 1 | 01/2011 |
| | | | P | 16 | 39 | 17 | | | | | | | | | | | |
| | | | BH | | | 50 | | | | | | | | | | | |
| 01730 | Pa | WHBODY | PB | 10 | 33 | 57 | 10 | 33 | 57 | 10 | 33 | 57 | 10 | 33 | 57 | 1 | 01/2011 |
| | | | P | 10 | 33 | 11 | | | | | | | | | | | |
| | | | BH | | | 46 | | | | | | | | | | | |

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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 1109580287 | 04/12/2011 | 04/05/2011 | 5 |

| Part # / Name / ID Number | Birth Date | Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 01/01/2011 - 03/31/2011 | | | Quarter 1 | | | 2011 | | | | | | | |
| 01731 | | | Pa | WHBODY | PB | 5 | 24 | 40 | 5 | 24 | 40 | 5 | 24 | 40 | 5 | 24 | 40 | 1 | 01/2011 |
| | | | | | P | 5 | 24 | 6 | | | | | | | | | | | |
| | | | | | B | | | 34 | | | | | | | | | | | |
| 01732 | | | Pa | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 1 | 01/2011 |
| 01733 | | | Pa | WHBODY | PM | 35 | 93 | 134 | 35 | 93 | 134 | 35 | 93 | 134 | 35 | 93 | 134 | 1 | 01/2011 |
| 01734 | | | Pa | WHBODY | P | 5 | 5 | 6 | 5 | 5 | 6 | 5 | 5 | 6 | 5 | 5 | 6 | 1 | 01/2011 |

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Quality Control Release: RCH 1 PR 9735 RPT131 N1 09587

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Chicago O'Hare International Airport (ORD) Data Set Dosimetry Report

"X-Ray Only" Algorithm

Electronic Representation

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 01/01/2011 - 03/31/2011 | | | Quarter 1 | | | 2011 | | | | | | | |
| 01711 | | | P | WHBODY | P | 32 | 34 | 34 | 32 | 34 | 34 | 37 | 38 | 38 | 37 | 38 | 38 | 6 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01712 | | | P | WHBODY | P | 25 | 26 | 26 | 25 | 26 | 26 | 28 | 28 | 28 | 28 | 28 | 28 | 6 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01713 | | | P | WHBODY | | M | M | M | M | M | M | 5 | 4 | 4 | 5 | 4 | 4 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01714 | | | P | WHBODY | P | 29 | 31 | 31 | 29 | 31 | 31 | 32 | 33 | 33 | 32 | 33 | 33 | 6 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01715 | | | P | WHBODY | P | 47 | 52 | 53 | 47 | 52 | 53 | 55 | 59 | 60 | 55 | 59 | 60 | 6 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01716 | | | P | WHBODY | P | 42 | 45 | 45 | 42 | 45 | 45 | 49 | 51 | 51 | 49 | 51 | 51 | 6 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01717 | | | P | WHBODY | P | 8 | 8 | 8 | 8 | 8 | 8 | 26 | 25 | 25 | 26 | 25 | 25 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01718 | | | P | WHBODY | P | 19 | 20 | 20 | 19 | 20 | 20 | 54 | 56 | 56 | 54 | 56 | 56 | 6 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01719 | | | P | WHBODY | P | 7 | 6 | 6 | 7 | 6 | 6 | 24 | 22 | 22 | 24 | 22 | 22 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01720 | | | P | WHBODY | P | 18 | 19 | 19 | 18 | 19 | 19 | 52 | 53 | 53 | 52 | 53 | 53 | 6 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01721 | | | P | WHBODY | P | 30 | 29 | 29 | 30 | 29 | 29 | 73 | 75 | 75 | 73 | 75 | 75 | 6 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01722 | | | P | WHBODY | P | 30 | 32 | 32 | 30 | 32 | 32 | 71 | 76 | 76 | 71 | 76 | 76 | 6 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

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|---|---|---|---|---|---|
| [redacted] | APG | 9700100004 | 01/17/2012 | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 01/01/2011 - 03/31/2011 | | | Quarter 1 | | | 2011 | | | | | | | |
| 01723 | | | P | WHBODY | P | 38 | 40 | 40 | 38 | 40 | 40 | 50 | 50 | 50 | 50 | 50 | 50 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01724 | | | P | WHBODY | P | 35 | 39 | 39 | 35 | 39 | 39 | 60 | 65 | 65 | 60 | 65 | 65 | 6 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01725 | | | P | WHBODY | P | 38 | 40 | 40 | 38 | 40 | 40 | 38 | 40 | 40 | 38 | 40 | 40 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01726 | | | P | WHBODY | P | 42 | 44 | 44 | 42 | 44 | 44 | 68 | 71 | 71 | 68 | 71 | 71 | 6 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01727 | | | P | WHBODY | P | 61 | 66 | 67 | 61 | 66 | 67 | 108 | 115 | 116 | 108 | 115 | 116 | 6 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01728 | | | P | WHBODY | P | 52 | 57 | 58 | 52 | 57 | 58 | 90 | 97 | 98 | 90 | 97 | 98 | 6 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01729 | | | P | WHBODY | P | 23 | 24 | 24 | 23 | 24 | 24 | 23 | 24 | 24 | 23 | 24 | 24 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01730 | | | P | WHBODY | P | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01731 | | | P | WHBODY | P | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 4 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01732 | | | P | WHBODY | P | 24 | 25 | 25 | 24 | 25 | 25 | 98 | 99 | 94 | 98 | 99 | 94 | 4 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01733 | | | P | WHBODY | P | 68 | 73 | 74 | 68 | 73 | 74 | 75 | 80 | 79 | 75 | 80 | 79 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01734 | | | P | WHBODY | P | 29 | 29 | 29 | 29 | 29 | 29 | 41 | 41 | 41 | 41 | 41 | 41 | 6 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

M: MINIMAL REPORTING SERVICE OF 1 MREM

Quality Control Release: RQR 1 PR 9928 RPT130 N1 D0001



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Radn Prot Consult No. 26-MF-0E7K-11, Rapiscan Secure 1000 SP Dosimetry Study, TSA, Arlington, VA, 21 Apr 10 - 17 Aug 11

Providence T.F. Green International Airport (PVD) Data Set Dosimetry Report

Default Algorithm

Electronic Representation

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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 1119310009 | 07/19/2011 | 07/12/2011 | 5 |

| Part # / ID Number | Name / Birth Date | Sex | Dosimeter | Use | Radiation Quality | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 04/01/2011 - 06/30/2011 | | | Quarter 2 | | | 2011 | | | | | | | |
| 00APG | CONTROL | | Pa | CNTRL | | M | M | M | | | | | | | | | | 2 | 04/2009 |
| 01711 | | | Pa | WHBODY | PB | 2 | 13 | 22 | 2 | 13 | 22 | 32 | 65 | 116 | 32 | 65 | 116 | 2 | 01/2011 |
| | | | | | P | 2 | 13 | 3 | | | | | | | | | | | |
| | | | | | B | | | 19 | | | | | | | | | | | |
| 01712 | | | Pa | WHBODY | P | 11 | 11 | 10 | 11 | 11 | 10 | 13 | 13 | 13 | 13 | 13 | 13 | 2 | 01/2011 |
| 01713 | | | Pa | WHBODY | P | 6 | 10 | 18 | 6 | 10 | 18 | 6 | 10 | 18 | 6 | 10 | 18 | 2 | 01/2011 |
| 01714 | | | Pa | WHBODY | P | 9 | 9 | 8 | 9 | 9 | 8 | 30 | 42 | 50 | 30 | 42 | 50 | 2 | 01/2011 |
| 01715 | | | Pa | WHBODY | P | 7 | 16 | 28 | 7 | 16 | 28 | 55 | 68 | 110 | 55 | 68 | 110 | 2 | 01/2011 |
| 01716 | | | Pa | WHBODY | P | 6 | 14 | 21 | 6 | 14 | 21 | 33 | 67 | 90 | 33 | 67 | 90 | 2 | 01/2011 |
| 01717 | | | Pa | WHBODY | | M | M | M | M | M | M | M | 21 | 42 | M | 21 | 42 | 2 | 01/2011 |
| 01718 | | | Pa | WHBODY | P | 16 | 16 | 17 | 16 | 16 | 17 | 24 | 46 | 62 | 24 | 46 | 62 | 2 | 01/2011 |
| 01719 | | | Pa | WHBODY | | M | M | M | M | M | M | M | 28 | 59 | M | 28 | 59 | 2 | 01/2011 |
| 01720 | | | Pa | WHBODY | P | 9 | 9 | 10 | 9 | 9 | 10 | 24 | 33 | 46 | 24 | 33 | 46 | 2 | 01/2011 |
| 01721 | | | Pa | WHBODY | PM | 39 | 53 | 76 | 39 | 53 | 76 | 54 | 105 | 160 | 54 | 105 | 160 | 2 | 01/2011 |

M: MINIMAL REPORTING SERVICE OF 1 MREM

Quality Control Release: SEB 1 PR 9803 RPT131 N1 19309



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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 1119310009 | 07/19/2011 | 07/12/2011 | 5 |

| Part # / ID Number | Name / Birth Date | Sex | Dosimeter | Use | Radiation Quality | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 04/01/2011 - 06/30/2011 | | | Quarter 2 | | | 2011 | | | | | | | |
| 01722 | | | Pa | WHBODY | P | 49 | 49 | 46 | 49 | 49 | 46 | 65 | 90 | 109 | 65 | 90 | 109 | 2 | 01/2011 |
| 01723 | | | Pa | WHBODY | | M | M | M | M | M | M | 23 | 75 | 145 | 23 | 75 | 145 | 2 | 01/2011 |
| 01724 | | | Pa | WHBODY | PM | 17 | 35 | 52 | 17 | 35 | 52 | 46 | 73 | 103 | 46 | 73 | 103 | 2 | 01/2011 |
| 01725 | | | Pa | WHBODY | PB | M | 13 | 37 | M | 13 | 37 | 40 | 59 | 109 | 40 | 59 | 109 | 2 | 01/2011 |
| | | | | | P | M | 13 | M | | | | | | | | | | | |
| | | | | | B | | | 37 | | | | | | | | | | | |
| 01726 | | | Pa | WHBODY | PB | 15 | 53 | 96 | 15 | 53 | 96 | 46 | 107 | 173 | 46 | 107 | 173 | 2 | 01/2011 |
| | | | | | P | 15 | 53 | 16 | | | | | | | | | | | |
| | | | | | BH | | | 80 | | | | | | | | | | | |
| 01727 | | | Pa | WHBODY | PB | 36 | 72 | 113 | 36 | 72 | 113 | 69 | 167 | 275 | 69 | 167 | 275 | 2 | 01/2011 |
| | | | | | P | 36 | 72 | 37 | | | | | | | | | | | |
| | | | | | BH | | | 76 | | | | | | | | | | | |
| 01728 | | | Pa | WHBODY | P | 44 | 44 | 42 | 44 | 44 | 42 | 81 | 110 | 143 | 81 | 110 | 143 | 2 | 01/2011 |

M: MINIMAL REPORTING SERVICE OF 1 MREM

Quality Control Release: SEB 1 PR 9803 RPT131 N1 19309



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Radn Prot Consult No. 26-MF-0E7K-11, Rapiscan Secure 1000 SP Dosimetry Study, TSA, Arlington, VA, 21 Apr 10 - 17 Aug 11

Providence T.F. Green International Airport (PVD) Data Set Dosimetry Report

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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 9700100004 | 01/17/2012 | | |

| Part # / Name / ID Number | Birth Date | Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 04/01/2011 - 06/30/2011 | | | Quarter 2 | | | 2011 | | | | | | | |
| 01711 | | | P | WHBODY | P | 5 | 4 | 4 | 5 | 4 | 4 | 37 | 38 | 38 | 37 | 38 | 38 | 7 | 01/2011 |
| NOTE | | | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01712 | | | P | WHBODY | P | 3 | 2 | 2 | 3 | 2 | 2 | 28 | 28 | 28 | 28 | 28 | 28 | 7 | 01/2011 |
| NOTE | | | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01713 | | | P | WHBODY | P | 5 | 4 | 4 | 5 | 4 | 4 | 5 | 4 | 4 | 5 | 4 | 4 | 6 | 01/2011 |
| NOTE | | | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01714 | | | P | WHBODY | P | 3 | 2 | 2 | 3 | 2 | 2 | 32 | 33 | 33 | 32 | 33 | 33 | 7 | 01/2011 |
| NOTE | | | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01715 | | | P | WHBODY | P | 8 | 7 | 7 | 8 | 7 | 7 | 55 | 59 | 60 | 55 | 59 | 60 | 7 | 01/2011 |
| NOTE | | | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01716 | | | P | WHBODY | P | 7 | 6 | 6 | 7 | 6 | 6 | 49 | 51 | 51 | 49 | 51 | 51 | 7 | 01/2011 |
| NOTE | | | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01717 | | | P | WHBODY | P | 18 | 17 | 17 | 18 | 17 | 17 | 26 | 25 | 25 | 26 | 25 | 25 | 6 | 01/2011 |
| NOTE | | | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01718 | | | P | WHBODY | P | 35 | 36 | 36 | 35 | 36 | 36 | 54 | 56 | 56 | 54 | 56 | 56 | 7 | 01/2011 |
| NOTE | | | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01719 | | | P | WHBODY | P | 17 | 16 | 16 | 17 | 16 | 16 | 24 | 22 | 22 | 24 | 22 | 22 | 6 | 01/2011 |
| NOTE | | | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01720 | | | P | WHBODY | P | 34 | 34 | 34 | 34 | 34 | 34 | 52 | 53 | 53 | 52 | 53 | 53 | 7 | 01/2011 |
| NOTE | | | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01721 | | | P | WHBODY | P | 43 | 46 | 46 | 43 | 46 | 46 | 73 | 75 | 75 | 73 | 75 | 75 | 7 | 01/2011 |
| NOTE | | | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01722 | | | P | WHBODY | P | 41 | 44 | 44 | 41 | 44 | 44 | 71 | 76 | 76 | 71 | 76 | 76 | 7 | 01/2011 |
| NOTE | | | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

M: MINIMAL REPORTING SERVICE OF 1 MREM

Quality Control Release: RQR 1 PR 9928 RPT130 N1 D0001



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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 9700100004 | 01/17/2012 | | |

| Part # / Name / ID Number / Birth Date / Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | 04/01/2011 - 06/30/2011 | | | Quarter 2 | | | 2011 | | | | | | | |
| 01723 | P | WHBODY | P | 12 | 10 | 10 | 12 | 10 | 10 | 50 | 50 | 50 | 50 | 50 | 50 | 6 | 01/2011 |
| NOTE | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01724 | P | WHBODY | P | 25 | 26 | 26 | 25 | 26 | 26 | 60 | 65 | 65 | 60 | 65 | 65 | 7 | 01/2011 |
| NOTE | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01725 | P | WHBODY | | M | M | M | M | M | M | 38 | 40 | 40 | 38 | 40 | 40 | 6 | 01/2011 |
| NOTE | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01726 | P | WHBODY | P | 26 | 27 | 27 | 26 | 27 | 27 | 68 | 71 | 71 | 68 | 71 | 71 | 7 | 01/2011 |
| NOTE | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01727 | P | WHBODY | P | 47 | 49 | 49 | 47 | 49 | 49 | 108 | 115 | 116 | 108 | 115 | 116 | 7 | 01/2011 |
| NOTE | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01728 | P | WHBODY | P | 38 | 40 | 40 | 38 | 40 | 40 | 90 | 97 | 98 | 90 | 97 | 98 | 7 | 01/2011 |
| NOTE | | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| [redacted] | | | | | | | | | | | | | | | | | |

M: MINIMAL REPORTING SERVICE OF 1 MREM

Quality Control Release: RQR 1 PR 9928 RPT130 N1 D0001



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Default Algorithm

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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 1124280012 | 09/07/2011 | 08/30/2011 | 5 |

| Part # / Name / ID Number / Birth Date / Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | 04/01/2011 - 06/30/2011 | | | Quarter 2 | | | 2011 | | | | | | | |
| 01734 | Pa | WHBODY | PB | M | 85 | 204 | M | 85 | 204 | 5 | 90 | 210 | 5 | 90 | 210 | 3 | 01/2011 |
| | | | P | M | 85 | M | | | | | | | | | | | |
| | | | BH | | | 204 | | | | | | | | | | | |
| 01735 | Pa | WHBODY | PM | 41 | 67 | 100 | 41 | 67 | 100 | 41 | 67 | 100 | 41 | 67 | 100 | 3 | 01/2011 |
| 01736 | Pa | WHBODY | PB | 4 | 104 | 202 | 4 | 104 | 202 | 4 | 104 | 202 | 4 | 104 | 202 | 3 | 01/2011 |
| | | | P | 4 | 104 | 4 | | | | | | | | | | | |
| | | | BH | | | 198 | | | | | | | | | | | |
| 01737 | Pa | WHBODY | PM | 49 | 59 | 81 | 49 | 59 | 81 | 49 | 59 | 81 | 49 | 59 | 81 | 3 | 01/2011 |
| 01738 | Pa | WHBODY | PB | 27 | 108 | 193 | 27 | 108 | 193 | 27 | 108 | 193 | 27 | 108 | 193 | 3 | 01/2011 |
| | | | P | 27 | 108 | 27 | | | | | | | | | | | |
| | | | BH | | | 166 | | | | | | | | | | | |
| 01739 | Pa | WHBODY | PM | 42 | 92 | 137 | 42 | 92 | 137 | 42 | 92 | 137 | 42 | 92 | 137 | 3 | 01/2011 |
| 01740 | Pa | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 3 | 01/2011 |
| 01741 | Pa | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 3 | 01/2011 |
| 01742 | Pa | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 3 | 01/2011 |
| 01743 | Pa | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 3 | 01/2011 |
| 01744 | Pa | WHBODY | P | M | 1 | 3 | M | 1 | 3 | M | 1 | 3 | M | 1 | 3 | 3 | 01/2011 |

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Quality Control Release: LCC 1 PR 9838 RPT131 N1 24212



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| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 1124280012 | 09/07/2011 | 08/30/2011 | 5 |

| Part # / ID Number | Name / Birth Date | Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 04/01/2011 - 06/30/2011 | | | Quarter 2 | | | 2011 | | | | | | | |
| 01745 | | | Pa | WHBODY | P | M | 4 | 9 | M | 4 | 9 | M | 4 | 9 | M | 4 | 9 | 3 | 01/2011 |
| 01746 | | | Pa | WHBODY | PM | 26 | 46 | 61 | 26 | 46 | 61 | 26 | 46 | 61 | 26 | 46 | 61 | 3 | 01/2011 |
| 01747 | | | Pa | WHBODY | PB | 7 | 41 | 76 | 7 | 41 | 76 | 7 | 41 | 76 | 7 | 41 | 76 | 3 | 01/2011 |
| | | | | | P | 7 | 41 | 7 | | | | | | | | | | | |
| | | | | | BH | | | 69 | | | | | | | | | | | |
| 01748 | | | Pa | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 3 | 01/2011 |
| 01749 | | | Pa | WHBODY | P | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 3 | 01/2011 |
| 01750 | | | Pa | WHBODY | PM | 41 | 84 | 130 | 41 | 84 | 130 | 41 | 84 | 130 | 41 | 84 | 130 | 3 | 01/2011 |
| 01751 | | | Pa | WHBODY | PM | 37 | 44 | 71 | 37 | 44 | 71 | 37 | 44 | 71 | 37 | 44 | 71 | 3 | 01/2011 |
| 01752 | | | Pa | WHBODY | PB | 42 | 59 | 140 | 42 | 59 | 140 | 42 | 59 | 140 | 42 | 59 | 140 | 3 | 01/2011 |
| | | | | | P | 42 | 59 | 42 | | | | | | | | | | | |
| | | | | | BH | | | 98 | | | | | | | | | | | |
| 01753 | | | Pa | WHBODY | PM | 50 | 50 | 51 | 50 | 50 | 51 | 50 | 50 | 51 | 50 | 50 | 51 | 3 | 01/2011 |
| 01754 | | | Pa | WHBODY | PM | 40 | 43 | 72 | 40 | 43 | 72 | 40 | 43 | 72 | 40 | 43 | 72 | 3 | 01/2011 |
| 01755 | | | Pa | WHBODY | PM | 31 | 56 | 98 | 31 | 56 | 98 | 31 | 56 | 98 | 31 | 56 | 98 | 3 | 01/2011 |

M: MINIMAL REPORTING SERVICE OF 1 MREM

Quality Control Release: LCC 1 PR 9838 RPT131 N1 24212

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|---|---|---|---|---|---|
| [redacted] | APG | 1124280012 | 09/07/2011 | 08/30/2011 | 5 |

| Part # / Name / ID Number | Birth Date | Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 04/01/2011 - 06/30/2011 | | | Quarter 2 | | | 2011 | | | | | | | |
| 01756 | | | Pa | WHBODY | PM | 64 | 78 | 99 | 64 | 78 | 99 | 64 | 78 | 99 | 64 | 78 | 99 | 3 | 01/2011 |
| 01757 | | | Pa | WHBODY | PM | 38 | 53 | 70 | 38 | 53 | 70 | 38 | 53 | 70 | 38 | 53 | 70 | 3 | 01/2011 |

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Quality Control Release: LCC 1 PR 9838 RPT131 N1 24212

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Dulles International Airport (IAD) Data Set Dosimetry Report

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|---|---|---|---|---|---|
| [redacted] | APG | 9700100004 | 01/17/2012 | | |

| Part # / ID Number | Name / Birth Date | Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 04/01/2011 - 06/30/2011 | | | Quarter 2 | | | 2011 | | | | | | | |
| [redacted] | | | | | | | | | | | | | | | | | | | |
| [redacted] | | | | | | | | | | | | | | | | | | | |
| [redacted] | | | | | | | | | | | | | | | | | | | |
| [redacted] | | | | | | | | | | | | | | | | | | | |
| [redacted] | | | | | | | | | | | | | | | | | | | |
| [redacted] | | | | | | | | | | | | | | | | | | | |
| 01734 | | P | WHBODY | P | | 12 | 12 | 12 | 12 | 12 | 12 | 41 | 41 | 41 | 41 | 41 | 41 | 7 | 01/2011 |
| | | | NOTE | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01735 | | P | WHBODY | P | | 52 | 59 | 60 | 52 | 59 | 60 | 52 | 59 | 60 | 52 | 59 | 60 | 5 | 01/2011 |
| | | | NOTE | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01736 | | P | WHBODY | P | | 39 | 42 | 42 | 39 | 42 | 42 | 39 | 42 | 42 | 39 | 42 | 42 | 5 | 01/2011 |
| | | | NOTE | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01737 | | P | WHBODY | P | | 47 | 51 | 51 | 47 | 51 | 51 | 47 | 51 | 51 | 47 | 51 | 51 | 5 | 01/2011 |
| | | | NOTE | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01738 | | P | WHBODY | P | | 57 | 63 | 64 | 57 | 63 | 64 | 57 | 63 | 64 | 57 | 63 | 64 | 5 | 01/2011 |
| | | | NOTE | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01739 | | P | WHBODY | P | | 61 | 67 | 67 | 61 | 67 | 67 | 61 | 67 | 67 | 61 | 67 | 67 | 5 | 01/2011 |
| | | | NOTE | | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

M: MINIMAL REPORTING SERVICE OF 1 MREM

Quality Control Release: RQR 1 PR 9928 RPT130 N1 D0001

G-98

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Electronic Representation

# Radiation Dosimetry Report

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[redacted]

| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 9700100004 | 01/17/2012 | | |

| Part # / Name / ID Number | Birth Date | Sex | Dos meter | Use | Rad at on Qua ty | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Incept on Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 04/01/2011 - 06/30/2011 | | | Quarter 2 | | | 2011 | | | | | | | |
| 01740 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 4 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01741 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 4 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01742 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 4 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01743 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 4 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01744 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01745 | | | P | WHBODY | | M | M | M | M | M | M | M | M | M | M | M | M | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01746 | | | P | WHBODY | P | 31 | 33 | 33 | 31 | 33 | 33 | 31 | 33 | 33 | 31 | 33 | 33 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01747 | | | P | WHBODY | P | 18 | 21 | 22 | 18 | 21 | 22 | 18 | 21 | 22 | 18 | 21 | 22 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01748 | | | P | WHBODY | P | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 4 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01749 | | | P | WHBODY | P | 11 | 14 | 14 | 11 | 14 | 14 | 11 | 14 | 14 | 11 | 14 | 14 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01750 | | | P | WHBODY | P | 54 | 58 | 58 | 54 | 58 | 58 | 54 | 58 | 58 | 54 | 58 | 58 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01751 | | | P | WHBODY | P | 32 | 36 | 36 | 32 | 36 | 36 | 32 | 36 | 36 | 32 | 36 | 36 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |

M: MINIMAL REPORTING SERVICE OF 1 MREM

Quality Control Release: RQR 1 PR 9928 RPT130 N1 D0001

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Electronic Representation

# Radiation Dosimetry Report

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[redacted]

| Account | Series | Analytical Work Order | Report Date | Dosimeter Recieved | Report Time In Work Days |
|---|---|---|---|---|---|
| [redacted] | APG | 9700100004 | 01/17/2012 | | |

| Part # / Name / ID Number | Birth Date | Sex | Dosimeter | Use | Radiation Quality | Dose Equivalent (MREM) For Periods Shown Below: Deep DDE | Eye LDE | Shallow SDE | Quarterly Accumulated Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Year to Date Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Lifetime Dose Equivalent (MREM): Deep DDE | Eye LDE | Shallow SDE | Records For Year | Inception Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| For Monitoring Period: | | | | | | 04/01/2011 - 06/30/2011 | | | Quarter 2 | | | 2011 | | | | | | | |
| 01752 | | | P | WHBODY | P | 25 | 28 | 28 | 25 | 28 | 28 | 25 | 28 | 28 | 25 | 28 | 28 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01753 | | | P | WHBODY | P | 31 | 34 | 35 | 31 | 34 | 35 | 31 | 34 | 35 | 31 | 34 | 35 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01754 | | | P | WHBODY | P | 31 | 35 | 35 | 31 | 35 | 35 | 31 | 35 | 35 | 31 | 35 | 35 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01755 | | | P | WHBODY | P | 39 | 45 | 47 | 39 | 45 | 47 | 39 | 45 | 47 | 39 | 45 | 47 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01756 | | | P | WHBODY | P | 70 | 78 | 79 | 70 | 78 | 79 | 70 | 78 | 79 | 70 | 78 | 79 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| 01757 | | | P | WHBODY | P | 44 | 48 | 49 | 44 | 48 | 49 | 44 | 48 | 49 | 44 | 48 | 49 | 5 | 01/2011 |
| | | | | NOTE | | CALCULATED DOSE ADDED TO CUMULATIVE | | | | | | | | | | | | | |
| [redacted] | | | | | | | | | | | | | | | | | | | |

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Quality Control Release: RQR 1 PR 9928 RPT130 N1 D0001

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