

National Aeronautics and Space Administration
Kennedy Space Center
Kennedy Space Center, FL 32899



Reply to Attn of: R. Scott/TA-A4A

RECRG10910*13AM07:27

J-6
M5-16

US Nuclear Regulatory Commission, Region I
Attention: Mr. Dennis Lawyer, Health Physicist
2100 Renaissance Blvd, Suite 100
King of Prussia, PA 19406-2713

09-11149-03

Subject: Response to NRC Docket No. 03014904, Control No. 581417, Request for additional information concerning application for renewal of license dated August 7, 2013.

Dear Mr. Lawyer:

This letter is written in response to the subject request for additional information regarding our NASA KSC NRC license renewal application.

Requested additional information is provided below for your review.

1. Eckert and Ziegler Models EAB-LB, A-2 AND AFSS-0010 AND QSA GLOBAL Models VZ-1370 and VZ-3516 were not listed in the sealed source and device registry. Request these sources be listed on our license under the form of "any".
2. Condition 13 on our license limits the amount of materials possessed so that we are not required to provide decommissioning financial assurance. We will continue to maintain inventory and control procurement of licensed material to quantities below the minimum limit specified in 10 CFR 30.35(d) for establishing decommissioning financial assurance.
3. In regards to our Radiation Protection Committee it was not clear how RPC members were selected, the number of RPC representatives and what constitutes a quorum during the meetings. The KSC RPC membership currently consists of 18 members (9 primary and 9 alternates). The RPC executive council members consist of the Chairman, co-chairman, RPO and an emergency management official. RPC members are NASA civil servants selected from KSC Directorates that have direct program oversight of operations involving ionizing and nonionizing sources/devices. RPC membership includes representative from Public Affairs, Chief Council, launch and ground processing services, fire/security/emergency response, Calibration, Safety, Engineering and others, as required. A quorum consist of the RPC Chairman and/or Cochairman, RPO (or designate alternate), and at least 4 other RPC members.
4. In regards to our Radiation Protection Committee approval process, the following clarification is provided. The KSC Radiation Protection Committee will review and approve proposed uses and users listed as part of the radiation use authorizations **prior** to use of any

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byproduct material. Temporary approval/authorization of use or users of byproduct material will not occur without the approval of the Radiation Protection Committee.

5. Condition 24 of our license authorizes greater flexibility to make program and procedure changes without having to obtain prior NRC approval. We request to maintain this flexibility with the following limitations:

a. Changes to our program and procedures will be limited to the following areas: training; audit program; radiation monitoring instruments; material receipt and accountability; safe use of radionuclides and emergency procedures; and radiation surveys. We will request and receive amendments to our license prior to implementing any other programmatic or procedural changes.

b. The proposed revision will be documented, reviewed and approved by the RPC in accordance with established procedures prior to implementation.

c. The revised program will be in accordance with regulatory requirements, will not change our license conditions and will not decrease the effectiveness of our Radiation Protection Program.

d. The Health Physics staff and other users as appropriate will be trained in the revised procedures prior to implementation.

e. The annual audit of our program will evaluate the effectiveness of the change and its implementation.

6. Attached is a copy of the Radiation Protection Officer "Delegation of Authority" for Mr. Randall Scott, signed by the Center Director.

7. Provide description of the ionizing radiation safety training program developed for each group of workers, including: topics covered qualifications of the instructors, method of training, method for assessing the success for the training and the frequency of training and refresher training.

Currently, there are no radiation users of licensed materials that would result in an occupational dose of 1 mSv (100 mrem) under our KSC License, with the exception of the contractor Health Physics staff. However, we do have a basic ionizing radiation protection training program conducted by the contractor HP staff for all other users of ionizing radiation to include: operators of the Hopewell gamma calibrator, Lab personnel who operate General Licensed devices (i.e. GC units, static elimination devices, x-ray metal analyzers, etc.), x-ray machines (medical and industrial – cabinets, electron microscope, x-ray diffraction) and payload processing personnel testing flight experiments that contain low level radiation sources. Training and experience summaries for the HP Staff are included in the License renewal application package.

Initial training is required for personnel listed on all ionizing radiation use authorizations before RPC approval. Refresher training is required every 3 years for these users. Topics covered under this training include: Purpose, Responsibilities under KNPR 1860.1, Basic Radiation Terms and Properties, Units of Measurement, Background Radiation and Man Made Radiation, Biological Effects, External and Internal Exposure, Federal and State Regulations, Regulatory Limits, Radiation Monitoring Devices, Worker's Responsibilities, Common sources of radiation, and

radioactive material Emergency Procedures. A written set of test questions with a “comment” section at the end is used to assess the effectiveness of the training.

8. As requested, attached is the updated procedure “Management of Radioactive Waste at KSC/CCAFS” that addresses Condition 22 of our license and other comments you have identified for this item. It should be noted that we would normally transfer all of our radioactive materials classified as “radioactive waste” to an authorized/licensed offsite vendor for disposal. Decay in storage would only be performed if offsite disposal facilities are unavailable.

9. The Health Physics Laboratory and low level radioactive materials storage area have been relocated to another facility on the Kennedy Space Center. Attached is a copy of the “close-out” radiological survey and inventory description of the sources that were located at the HP Laboratory and low level radioactive materials storage area. A risk based approach was used to determine the level of survey effort required to demonstrate compliance with the “close-out” survey. Based on final results of the survey data analysis and review of historical radiation source use, it was determined by the KSC RPO that the HP Lab and storage area met the radiological criteria for unrestricted use as identified in 10CFR 20.1402.

Use of radioactive materials utilized in this HP laboratory was restricted to the calibration sources needed to run the daily efficiencies of the Low level alpha/beta/gamma counters, quenched and unquenched standards for the liquid scintillation counter and response check source for the field monitoring instruments (nano/microCurie quantities). Other Licensed materials were not authorized for storage in the HP lab including sealed or unsealed sources. The only potential for HP laboratory contamination was limited to that collected on wipe samples analyzed for contamination control and source leak testing analysis.

HP Lab operations are conducted only for performing field swipe samples and leak test analysis. Field measurements were obtained on these samples prior to bringing them into the Lab. All past contamination swipes and leak tests were found to be well below regulatory limits. It should be noted there has never been a radiological spill/incident in the HP lab or radioactive materials storage room. All past quarterly radiation protection surveys conducted in the HP Lab and the radioactive materials storage area never revealed contamination above unrestricted use limits. The low level radioactive sources under our license were stored in the radioactive materials storage room and were never brought into the HP lab for use. The primary purpose of the radioactive materials storage area was for a temporary storage of low level (mCi/uCi) sources (calibrations sources, smoke detectors, exit signs, etc.) no longer needed. A review of the historical records for this storage area substantiated no other types or quantities of radioactive material were stored in this room.

After review of NUREG-1757, Activities under our NRC License meets Section “7.3 GROUP 1: UNRESTRICTED RELEASE; NO DECOMMISSIONING PLAN REQUIRED”. Condition 13 of our license restricts the amount of radioactive material below the minimum specified in 10 CFR 30.35 (d) and as such, only includes microCurie/milliCurie licensed sources. The KSC Radiation Protection Committee was briefed on the results of the HP lab and radioactive materials storage “close-out” radiation protection surveys and concurred with the RPO’s conclusion that the surveys demonstrated compliance for “unrestricted use”. The RPC was also

briefed on the initial background radiation survey activities at the new facility prior to the move. RPC approval was obtained on the new proposed location for the HP lab and radioactive materials storage area. Given our understanding of the flexibility our Radiation Protection Program has to make program changes, prior approval from the Commission was thought not to be required.

Therefore, "request for release" for this facility was not made to the Commission. This facility was subsequently demolished. If, in fact, a request for release of this facility is deemed necessary, we would request such at this time.

Should you have any questions regarding this information please contact me at 321-867-6958 or E-mail me at randall.e.scott@nasa.gov .

Sincerely,

A handwritten signature in cursive script that reads "Randall Scott".

Randall Scott,
KSC Radiation Protection Officer

National Aeronautics and
Space Administration
John F. Kennedy Space Center
Kennedy Space Center, FL 32899



February 7, 2003

Reply to Attn of: TA

TO: Distribution

FROM: AA/Director

SUBJECT: Delegation of Authority for KSC Radiation Protection Officer

Mr. Randall E. Scott has been appointed the Kennedy Space Center Radiation Protection Officer and is responsible for ensuring the safe use of all ionizing and non-ionizing radiation use at KSC, including byproduct radioactive material authorized under the Center's Nuclear Regulatory Commission (NRC) Broad Scope license. The KSC Radiation Protection Officer is responsible for managing the radiation protection program; identifying radiation protection problems; initiating, recommending, or providing corrective actions; verifying implementation of corrective actions; and ensuring compliance with KSC, NASA, and Federal regulations governing its use. The KSC Radiation Protection Officer is hereby delegated the authority necessary to meet these responsibilities.

The KSC Radiation Protection Officer has the authority to immediately stop any operations involving sources of ionizing or non-ionizing radiation in which health and safety may be compromised, or may result in non-compliance with NRC requirements. Should you have any questions on this matter, please contact Mr. Randall Scott at 867-6958.

A handwritten signature in cursive script that reads "Roy D. Bridges, Jr." The signature is written in black ink and is positioned above the printed name.

Roy D. Bridges, Jr.

Distribution:
STD-L-R

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	Responsible Organization: Health Physics	

Document Type: Policy Procedure Instruction

Approval Signatures:

Title:

Signature on file

Approval: Jim Taffer

**Environmental Health
Services Branch Manager**

Signature on file

Concurrence: Rod E. Nickell

Health Physics Supervisor

Signature on file

Concurrence: Randall Scott

**KSC Radiation Protection
Officer**

Signature on file

Prepared By: David Lake

**Environmental Health
Specialist**

1. PURPOSE:

- 1.1. The purpose of this Instruction is to describe the sequence of events to be followed by InoMedic Health Applications (IHA) Health Physics for the collection, storage, and disposition of radioactive waste generated at KSC/CCAFS. This Instruction is developed to ensure conformance with the requirements of the applicable Federal and State regulatory agencies and the KSC/CCAFS Radiation Protection Programs and as required by the IHA Statement of Work (SOW).

2. SCOPE:

- 2.1. This Instruction establishes a standard procedure for use by IHA Health Physics personnel for handling radioactive waste on KSC/CCAFS in support of the KSC/CCAFS Radiation Protection Programs.

3. DEFINITIONS: NA

4. RESPONSIBILITIES:

- 4.1. The Supervisor, Health Physics:
 - 4.1.1. Ensure the timely performance and task documentation of the radwaste survey, transfer, decay in storage (DIS), and/or shipments.
 - 4.1.2. Provide training to Health Physics personnel with an operational need relating to the provisions of this Instruction.
 - 4.1.3. Perform a final review of the completed reports/documents involving radwaste surveys, inventories, transfers, decay in storage and ensure

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completeness and accuracy of the information and conformance with regulatory requirements and the guidelines provided by this Instruction.

- 4.1.4 Initial the concurrence copy of radwaste surveys, transfers, shipment, and transmittal letters, indicating such a review has occurred.
- 4.2. Environmental Health Specialist, Health Physics:
 - 4.2.1 Perform Radwaste inventories, surveys, transfers, DIS, and shipments in accordance with the guidelines of this Instruction.
 - 4.2.2 Complete all applicable KSC/CCAFS Forms regarding surveys, transfers, DIS, or shipments of radioactive waste.
 - 4.2.3 File the results of the swipe samples in the monthly swipe sample book.
 - 4.2.4 Record and maintain the appropriate information in the Health Physics Radioactive Materials Inventory/Locator, as applicable.
 - 4.2.5 Draft transmittal letter (with attachments) to be sent to the responsible Area Radiation Officer (ARO) or Radiation Protection Officer (RPO), as applicable.
 - 4.2.6 Provide complete radwaste package to the Health Physics Supervisor within five (5) working days of final processing operation.
 - 4.2.7 Review this Instruction periodically for update/revision, or verification.
- 4.3. Environmental Health Clerk:
 - 4.3.1 Prepare survey transmittal correspondence for signature.
 - 4.3.2 File the survey, inventories, transfers, DIS, and shipment results in the appropriate files.
 - 4.3.3 Send Electronic copy to ARO and RPO.

5. REQUIREMENTS / PROCESS:

5.1. Instrumentation:

Refer to specific instrument/system operating instruction for operation and checkout instructions.

- 5.1.1. Eberline Model RO-2, Canberra Radiagem 4000 or equivalent exposure rate meter.
- 5.1.2. Eberline Model E-520, Canberra Radiagem 4000 or equivalent count rate meter (dependent upon isotope).

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5.1.3. Ludlum Model-12, Canberra Radiagem 4000 or equivalent count rate meter (dependent upon isotope).

5.1.4. Gamma Products Model G5000W, Low Level Alpha/Beta Counting System.

5.1.5. Packard Tri-Carb Model 2500TR, Liquid Scintillation Analyzer, Low Level Counting System.

5.2. Materials:

5.2.1. Smears (swipes/wipes).

5.2.2. Filter papers (47 mm), as necessary.

5.2.3. Small/large zip lock sample bags (6" x 6" up to 12" x 12").

5.2.4. Permanent Lab Marker.

5.2.5. Plastic or duct tape.

5.2.6. Pen/pencil.

5.2.7. Paper/clipboard.

5.2.8. Storage containers.

5.3. Personal Protective Equipment:

Personal protection required will be dependent upon the radionuclides being handled, the type of handling required and the quantity/activity/form (physical) of radioactive material.

5.3.1. Gloves (rubber with cotton liners).

5.3.2. Anti-contamination clothing (Tyvek), as required.

5.3.3. Respiratory protection, as required.

5.3.4. Personnel dosimetry (TLD's).

5.3.5. Electronic Personal Dosimeter (EPD), as required.

5.4. Other Equipment Required:

Not applicable to this Instruction.

5.5. General Instructions:

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5.5.1. Radioactive waste items and materials generated by users of radioactive materials at KSC/CCAFS will be collected by Health Physics for temporary storage or decay in storage (DIS) in a designated approved radioactive waste storage facility.

5.5.1.1 No Radioactive Material, liquids or sources are released into sanitary sewerage systems, incinerated, or compacted at the Kennedy Space Center. All Radioactive Material is either DIS or shipped or picked up by an authorized vendor.

5.5.2. Radioactive biological waste generated by user organizations may be collected by Health Physics. However, prior to collection, appropriate arrangements must be made by the user in coordination with the Health Physics office for their disposal by a qualified licensed contractor authorized for such activities, and is subject to KSC/CCAFS RPO review and approval. This also applies to liquid wastes with a half-life greater than 120 days.

5.5.3. Mixed waste generated by user organizations may be collected. However, prior to collection, appropriate arrangements must be made by the user in coordination with the Health Physics Office, Environmental Sampling Analysis Monitoring (ESAM) office and Waste Management office for their disposal/storage, and is subject to KSC/CCAFS RPO review and approval (Ref. EPA/530-SW-90-057. EPA, 'Low Level Mixed Waste, A RCRA Perspective for NRC Licenses').

5.5.4. A review of the approved Use Authorization for each individual user organization should be performed, verifying controls and provisions regarding generation, storage, and disposal of radioactive waste material. Elements involved in Health Physics review of the Use Authorization should include:

5.5.4.1. Steps made by the user organization engaged in industrial uses of licensed material to substantially reduce, and in some cases eliminate the need to send radioactive waste to commercial low-level waste disposal facilities.

5.5.4.2. Ensure reduction of radioactive waste through the following methods:

5.5.4.2.1. Segregate radioactive waste from non-radioactive waste to reduce unnecessary volume.

5.5.4.2.2. Hold waste with short-lived Radionuclides (half-life of 120 days or less) in storage for decay to background levels, (i.e. a period of not less than 10 half-lives) then dispose of as ordinary trash.

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5.5.5. All wastes collected by Health Physics shall be segregated by radioactive material and chemical form, if possible.

5.5.6. Low-level radioactive waste includes laboratory samples, filter papers, smears, etc., which exceed the limits below:

5.5.6.1. U-Nat, U-235, U-238, and 1000 dpm/100 cm² associated decay products.

5.5.6.2. Transuranics, Ra-226, Ra-228, 20 dpm/100 cm² Th-230, Th-228, PA-231, Ac-227, I-125, and I-129.

5.5.6.3. Th-Nat, Th-232, Sr-90, Ra-223, 200 dpm/100 cm² Ra-224, U-232, I-126, and I-131.

5.5.6.4. Beta-gamma emitters (nuclides 1000 dpm/100 cm² with decay modes other than alpha emission or spontaneous fission) except Sr-90 and others noted above.

5.5.7. Materials are held pending disposal in accordance with the applicable Federal, State and KSC/CCAFS Radiation Protection Program requirements.

5.6. Facilities:

Two (2) facilities are available for use by Health Physics personnel in handling radioactive waste at KSC/CCAFS:

5.6.1. Environmental Health Hazardous Material Storage Facility (Building No. 54927, CCAFS). Storage area for all types of radioactive sources and potentially contaminated items containing radioactive materials.

5.6.2. Health Physics Radioactive Material Storage (Building No. K6-1896, Room No. 1003). Storage area for various types of radioactive sources and items containing radioactive materials.

5.7. General Safety/Protection Considerations:

5.7.1. Calibrated survey instrumentation capable of detecting appropriate types and fields(s) of radiation (refer to appropriate instrument instruction for instrument characteristics and operating procedures) will be on hand during all operations involving radioactive waste materials.

5.7.2. In all cases, every reasonable effort will be made to reduce the volume of waste stored, this will be performed as follows:

5.7.2.1. Perform a survey of the item(s) to confirm that it is radioactive, or radiologically contaminated.

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- 5.7.2.2. Disassembly of device/equipment to remove the radioactive source, if appropriate.
- 5.7.3. In all cases and locations, un-encapsulated waste materials will be handled/processed over covered surfaces.
- 5.7.4. Gloves and other personal protective equipment, as appropriate, will be used whenever handling un-encapsulated or contaminated waste materials or when handling waste storage containers.
- 5.7.5. Following all operations with un-encapsulated waste or contaminated material, contamination surveys of facility/equipment and self, will be performed. Any abnormal contamination levels (greater than three times background) will require notification to the Health Physics Supervisor. Decontamination actions will be taken following determination of the nature and extent of such contamination.
- 5.8. Collection of Radioactive Waste:
 - 5.8.1. Upon notification of intended receipt of radioactive waste material, ascertain the following information (Refer to Use Authorization regarding controls/provisions identified for handling radioactive waste).
 - 5.8.1.1. Organization transferring waste material.
 - 5.8.1.2. Radioisotope(s) being transferred.
 - 5.8.1.3. Physical/chemical form of material.
 - 5.8.1.4. Activity.
 - 5.8.1.4.1. Normally a matter of record information.
 - 5.8.1.4.2. May otherwise require qualitative and quantitative lab analysis.
 - 5.8.2. Complete Section I, Parts A, B, and C (2) of the applicable Radioactive Material Transfer Receipt (KSC Form 28-45NS for KSC generated waste, 45 SW Form 2261 for CCAFS generated waste).
- 5.9. Handling of Radioactive Waste:
 - 5.9.1. Collect the following materials/equipment for use in performing radiation/contamination surveys:
 - 5.9.1.1. All items specified in Section 5.2 "Materials".
 - 5.9.1.2. Gloves (rubber with cotton liners).

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- 5.9.1.3. Anti-contamination clothing (Tyvek as necessary).
- 5.9.1.4. Respiratory protection (as necessary).
- 5.9.1.5. Count-rate meter (dependent on isotope).
- 5.9.1.6. Exposure rate meter (as necessary).
- 5.9.1.7. Personnel dosimetry (TLD's).
- 5.9.2. Upon arrival at survey site, perform a background check on all instruments (refer to specific instruction for each instrument utilized).
- 5.9.3. Perform initial radiation/contamination survey of item(s) (EVH-I-H214 "Ionizing Radiation Survey).
- 5.9.4. If contamination levels exceed three times background, consider the item contaminated and notify the Health Physics Supervisor.
- 5.9.5. All items of radioactive waste will be double bagged in the appropriate sized zip lock bags.
 - 5.9.5.1 On the outside of the outer zip lock bag, record the following data on the Radioactive Material Label with indelible lab marker and affix to the outside of the outer bag:
 - 5.9.5.1.1 Isotope.
 - 5.9.5.1.2 Activity.
 - 5.9.5.1.3 Date
 - 5.9.5.1.4 Radioactive Materials Transfer Receipt No.
Located on the top right hand corner of the form.
- 5.9.6. Transfer waste material to the EH Hazardous Material Storage Facility (Building No. 54927, CCAFS or Health Physics Radioactive Material Storage (Building No. K6-1896, Room No. 1003).) for further handling and packaging.
- 5.9.7. Complete remaining sections of the applicable Radioactive Material Transfer Receipt". Copies of this form will be distributed as follows:
 - 5.9.7.1. A copy will be forwarded to the KSC Radiation Protection Officer or 45th SPW Radiation Protection Officer, as applicable.
 - 5.9.7.2. A copy will be placed in the Radioactive Waste file.

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5.9.7.3. A copy will be forwarded to the originator organization's Area Radiation Officer.

5.9.7.4. A copy will be placed into the outer zip lock bag and placed into the designated waste storage drum along with the waste material.

5.9.7.5. Additional copies can be made for other distribution, as needed.

5.9.8 In the case of material being held for decay in storage, (half-life of 120 days or less), go to section 5.10 for further instruction.

5.9.9. Verify that all labeling and documentation is complete and accurate.

5.9.10. If radioactive waste handling took place somewhere other than the EH Hazardous Storage Facility, transfer the item(s) to the storage facility at this time.

5.9.11. Place bagged waste into the appropriate waste storage container or other designated storage location.

5.9.12. Perform radiation survey of the container and room (if required), radiation levels must be within the following criteria:

5.9.12.1. Less than 200 mR/hr on surface of container.

5.9.12.2. Less than 10 mR/hr at one meter from the surface of the container.

5.9.12.3. Less than 0.5 mR/hr on exterior surface of the room/building.

SEE SECTION 5.11 for Preparation of Shipment of RadWaste

5.10. Disposal for Decay in Storage (DIS)

5.10.1 Only short lived waste (physical half life of less than or equal to 120 days) may be disposed of by DIS.

5.10.2 Short lived waste should be segregated from long lived waste.

5.10.3 Waste should be stored in suitable well --marked containers, and the containers should provide adequate shielding.

5.10.4 Liquid and Solid wastes must be stored separately.

5.10.5 When a container is full, or nothing else is stored with a waste item, the container should be sealed. The sealed container should be identified with a label affixed or attached to it.

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5.10.6 The label should include:

- 5.10.6.1 The date when the container was sealed
- 5.10.6.2 The longest lived radioisotope in the container
- 5.10.6.3 Total activity
- 5.10.6.4 Date when 10 half-lives of the longest lived isotope will have transpired
- 5.10.6.5 Initials of the individual who sealed the container

5.10.7 The contents of the container should be allowed to decay for at least ten half-lives of the longest lived radioisotope in the container.

5.10.8 Prior to disposal as ordinary trash, each container should be monitored as follows:

- 5.10.8.1 Select appropriate instrumentation (i.e. microR meter) capable of adequately recording background levels of radiation. Response check the radiation detection survey meter for proper operation.
- 5.10.8.2 Survey the contents of each container in a low background area. Record the background radiation level.
- 5.10.8.3 Remove any shielding from around the container
- 5.10.8.4 Monitor radiation levels on all surfaces of the container to ensure radioactivity cannot be distinguished from normal background levels. Record the Radiation level measured on the surface of each waste container.
- 5.10.8.5 Remove/obliterate all radiation labels on containers or trash that is discard as ordinary waste.
- 5.10.8.6 Discard contents as ordinary trash only if the surveys of the contents indicate no residual radioactivity, ie. surface readings are indistinguishable from background.
- 5.10.8.7 Record the name of the individual who performed the disposal.
- 5.10.8.8 If the surveys indicate no residual radioactivity, record the date when the container was sealed, the disposal date, type of waste (used or unused materials, gloves, etc) survey instrument used, and the initials of the individual performing surveys and disposing of the waste.

5.10.8.9 Maintain records of the disposal of licensed material for 3 years. The records must include: date of disposal, survey instrument used, background radiation

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levels, radiation level measured at the surface of each container, and the name of the Health Physics Specialist performing the disposal.

5.11 Post Handling Operations:

Upon return to the Health Physics Office, perform the following:

- 5.11.1. Count smears taken during transfer survey on the applicable laboratory counting system (Refer to specific laboratory counting system instruction).
- 5.11.2. File the results of the wipe samples in the monthly wipe sample book.
- 5.11.3. Notify Health Physics Supervisor if contamination levels exceed limits stated in Section 5.5 General Instructions Section 5.5.7.
- 5.11.4. If smears taken during contamination survey exceed contamination levels specified, the smears will also need to be placed into radioactive waste.
- 5.11.5. Prepare radioactive waste survey transmittal letter including all pertinent documentation pertaining to subject operation, and provide to the Health Physics Supervisor for review.

5.12 Preparation of Shipment:

- 5.12.1. Shipments of radioactive waste must be coordinated with the KSC Radiation Protection Officer (KSC RPO) and 45th Space Wing (SPW) Radiation Protection Officer. All applicable radioactive shipping documents (i.e., DOT, State of Florida) must be completed to ensure compliance with regulatory agencies.
 - 5.12.1.1. Provide the KSC/45th SPW RPO complete inventory of radioactive waste to be shipped, total number of containers, and gross weight of all containers.
- 5.12.2. Shipments of radwaste will only be performed by a licensed contractor authorized for such activities.
- 5.12.3. After date of arrival of radwaste shipping contractor is confirmed, notify the State of Florida, Office of Radiation Control.
- 5.12.4. All containers must be labeled in accordance with 49 CFR Part 173 and State of Florida Administrative Code 64E-5.
- 5.12.5. The shipping contractor and State of Florida Inspector (if required), will be accompanied by representatives of the Health Physics Office during loading of containers for shipment.
- 5.12.6. Upon return to the Health Physics Office, perform the following:

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- 5.12.6.1 Count smears taken during shipout survey on laboratory counting instrument (Refer to specific instrument instruction.)
- 5.12.6.2 File the results of the swipe samples in the monthly swipe sample book.
- 5.13 Notify the Health Physics Supervisor if contamination levels exceed limits stated in Section 5.5 "General Instructions" Section No. 5.5.7.
- 5.14 Prepare radioactive waste shipping survey transmittal letter including all pertinent documentation pertaining to subject operation, and provide to supervisor for review.
- 5.15 Update Radioactive Materials Inventory Locator database to reflect the removal/deletion of the Radiation sources from KSC/CCAFS.

6. RECORDS:

Record Title	Responsible Organization	Retention Period
KSC Form 28-45NS	Health Physics	Destroy 10 years after expiration of license. (NPR 1441.D 8700)

7. RELATED DOCUMENTS:

- 7.1. KNPR 1860.1 "KSC Ionizing Radiation Protection Program".
- 7.2. 45th Space Wing Instruction (SWI) 40-201 (as revised) "Radiation Protection Program".
- 7.3. U.S. Code of Federal Regulations, Title 10, Parts 20 and 61, "Energy", U.S. Nuclear Regulatory Commission.
- 7.4. U.S. Code of Federal Regulations, Title 49, Parts 100-179, "Transportation", U. S. Nuclear Regulatory Commission.
- 7.5. Florida Administrative Code 64E-5.
- 7.6. NASA/KSC, USNRC License No. 09-11149-03.
- 7.7. U.S. Code of Federal Regulations, Title 40, Parts 260-272, "Protection of the Environment," U. S. Environmental Protection Agency.
- 7.8. U.S. Atomic Energy Act.

8. REVISION HISTORY:

Revision:	Summary of Changes (Page, Paragraph, Description)	Date:
6	First issue on MESC	6/3/2009
7	Update of IOP to reflect new location of HP lab, and other minor corrections as applicable	2/7/2013
8	Review IOP	5/3/13

Medical and Environmental Support (MESc) Quality System Document

Title: MANAGEMENT OF RADIOACTIVE WASTE AT KSC/CCAFS	Document No. EVH-I-H211	Page 12 of 12
	Revision No. 9	Date: 8/23/2013
	Responsible Organization: Health Physics	

9	Update IOP to correct Decay in Storage requirements	8/23/2013
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Medical and Environmental Support Contract (MESC) • Kennedy Space Center, FL

January 17, 2013

T201211-4962

Randy Scott, TA-A4A
NASA
Kennedy Space Center, Florida

**CLOSE-OUT RADIATION PROTECTION SURVEY,
BUILDING 49635, HEALTH PHYSICS OFFICE (ROOMS 1264 & 1265A), CCAFS, FL**

- References:
- 1) Use Authorization K-IR-10000 (Expires September 1, 2013)
 - 2) KNPR 1860.1, "KSC Ionizing Radiation Protection Program"
 - 3) 45th SWI 40-201 "Radiation Protection Program"
 - 4) USNRC License No. 09-11149-03 (Expires August 31, 2013)

The purpose of this survey is to conduct/document measurements and provide analytical results to demonstrate that Building 49635, Rooms 1264 and 1265A do not exceed residual radiological contamination limits resulting from licensed activities. The radionuclides of concern, with their activities are identified in the attached Radioactive Material Inventories.

A complete listing of the swipe locations and results are identified in the attached Analyses Results.

The radiation survey and contamination swipe analysis indicated no levels of radiation above background and no residual contamination levels above regulatory limits.

All of the radiation sources/material, counting equipment, computers, storage cabinets, sample prep tables, and all associated equipment/supplies have been removed and relocated to the new Health Physics Office (Facility Number K6-1547, Room 1513, KSC, FL) or the new Health Physics Radioactive Material Storage Room (Facility Number K6-1896, Room 1003, KSC, FL).

All of the radiological signs, labels, and postings have also been removed. Based on the survey analyses results the subject facility/rooms can be opened for normal occupancy and use.

Attached for your records are the Health Physics Radiation Survey Records (KSC Form 16-383NS) for the subject close-out surveys. The aforementioned surveys were performed on January 11, 2013 by D. S. Lake, of this office.

No items of noncompliance or unsafe conditions were noted during this survey.

If there are any questions regarding this transmittal, please contact David Lake or the undersigned at (321) 861-5218.

A handwritten signature in black ink, appearing to read "Rod Nickell". The signature is written in a cursive style with a large initial "R".

Rod Nickell, CLSO
Health Physics Supervisor

DSL:krl

Attachments: a/s

cc: Capt. Eric Bacon, 45 AMDS/SGPB
1st Lt. Nadia Halim, 45 AMDS/SGPB
MSgt. Michael Watson, 45 AMDS/SGPB
Jim Taffer, IHA-022

RADIOACTIVE MATERIAL INVENTORY / K-IR-10000

Health Physics Office (Health Physics Laboratory – Room 1264)

Radioactive Material

RCN Number	Serial Number	Isotope	Total Activity	Source Form	Source Manufacture	Source Use
R2806	59017021	Cs-137	40.4 uCi (1.49 MBq)	Solid	NEN	Check Source
R2807	59017022	Cs-137	39.8 uCi (1.42 MBq)	Solid	NEN	Check Source
R3236	E-998	Ba-133	18.8 uCi (0.695 MBq)	Solid	Packard	Calibration Source
R3346	B4-614	Am-241	0.002 uCi (0.074 kBq)	Solid	Isotope Products	Calibration Source
R3347	B4-615	Sr-90	0.008 uCi (0.296 kBq)	Solid	Isotope Products	Calibration Source
R3424	MP-139	Am-241	0.017 uCi (0.629 kBq)	Solid	AEA Technology	Calibration Source
R3425	MP-168	Sr-90	0.018 uCi (0.666 kBq)	Solid	AEA Technology	Calibration Source
R3613	3	H-3	0.117 uCi (4.32 kBq)	Liquid	Packard	Quench Curve
R3614	19	C-14	0.057 uCi (2.10 kBq)	Liquid	Packard	Quench Curve
R3615	165	C-14	0.059 uCi (2.18 kBq)	Liquid	Packard	Unquenched
R3616	165	H-3	0.119 uCi (4.40 kBq)	Liquid	Packard	Unquenched

RADIOACTIVE MATERIAL INVENTORY / K-IR-10000

Health Physics Office (Radioactive Material Storage - Room 1265A)

Radioactive Material

RCN Number	Serial Number	Isotope	Original Activity	Source Form	Source Manufacture	Source Use
R2669	N376	Am-241	30.0 mCi (1.11 GBq)	Solid	Metorex, Inc.	Calibration Source
R2670	Le-618	Fe-55	40.0 mCi (1.48 GBq)	Solid	Metorex, Inc.	Calibration Source
R2780	BA-54/14074	Cs-137	20.0 mCi (0.74 GBq)	Solid	Amersham	Calibration Source
R2812	2u391	Co-60	10.0 uCi (0.37 MBq)	Solid	Amersham	Calibration Source
R2835	28-49ex 37&46	Am-241	1.0 uCi (37.0 kBq)	Solid	N/A 20 Sources	Calibration Sources
R2993	HH-408	Am-241	22.9 uCi (0.84 MBq)	Solid	Isotope Products	Instrument Check Sources
R3150	PP-409	Cs-137	1.03 uCi (38.1 kBq)	Solid	Isotope Products	Instrument Check Sources
R3219	HTI-144	H-3	0.27 uCi (9.99 kBq)	Solid	Spectrum Techniques	Instrument Check Sources
R3288	11402 1-7	Cs-137	9.48 uCi (0.35 MBq)	Solid	Spectrum Techniques	Instrument Check Sources
R3311	B1-604	Cf-252	50.0 uCi (1.85 MBq)	Solid	Isotope Products	Instrument Check Sources
R3312	2	Eu-152	1.0 uCi (37.0 kBq)	Solid	Spectrum Techniques	Instrument Check Sources
R3352	1467	Cs-137	1.0 uCi (37.0 kBq)	Solid	N/A	Instrument Check Sources
R3426	1597,1687 1051,1390	Cs-137	9.0 uCi (0.33 MBq)	Solid	N/A	Instrument Check Sources
R3427	N/A	DU	3.0 uCi (0.11 MBq)	Solid	N/A	Instrument Check Sources
R3495	PZ 336	Am-241	89.0 pCi (3.29 Bq)	Solid	QSA Global	Instrument Check Sources

RADIOACTIVE MATERIAL INVENTORY / K-IR-10000

Health Physics Office (Radioactive Material Storage - Room 1265A)

Radioactive Material

RCN Number	Serial Number	Isotope	Original Activity	Source Form	Source Manufacture	Source Use
R3496	PZ 337	Am-241	89.0 pCi (3.29 Bq)	Solid	QSA Global	Instrument Check Sources
R3565	RR 451	Pu-238	0.9 uCi (33.3 kBq)	Solid	QSA Global	Calibration Source
R3593	45L 15935	Am-241	80.0 uCi (2.96 MBq)	Solid	Pyrotronics	Calibration Source
R3594	G9-140	Pu-238	1.64 uCi (60.6 kBq)	Solid	QSA Global	Calibration Source
R3603	41C4396	Am-241	80.0 uCi (2.96 MBq)	Solid	Pyrotronics	Calibration Source
R3604	27C00819	Am-241	80.0 uCi (2.96 MBq)	Solid	Pyrotronics	Calibration Source
R3617	H6-555	Am-241	0.024 uCi (0.888 kBq)	Solid	Eckert & Ziegler	Instrument Check Sources
R3647	A8059	Cd-109	5.0 mCi (185.0 MBq)	Solid	Metorex, Inc.	Instrument Check Sources

K-IR-10000 Health Physics Office, Bldg. 49635, CCAFS

Health Physics Laboratory (Room 1264) – Pre-Closeout



Health Physics Laboratory (Room 1264) – Pre-Closeout



K-IR-10000 Health Physics Office, Bldg. 49635, CCAFS

Health Physics Laboratory (Room 1264) - Radioactive Source Storage Cabinet - Pre-Closeout



Health Physics Radioactive Material Storage Room (Room 1265A) – Pre-Closeout



K-IR-10000 Health Physics Office, Bldg. 49635, CCAFS

Radioactive Material Storage Cabinet (Room 1265A) – Pre-Closeout



K-IR-10000 Health Physics Office, Bldg. 49635, CCAFS

Health Physics Laboratory (Room 1264) – Post - Closeout



Health Physics Laboratory (Room 1264) – Post – Closeout



K-IR-10000 Health Physics Office, Bldg. 49635, CCAFS

Health Physics Laboratory (Room 1264) - Radioactive Material Storage Cabinet (Room 1264) Post - Closeout



Health Physics Radioactive Material Storage Room (Room 1265A)
Post - Closeout



K-IR-10000 Health Physics Office, Bldg. 49635, CCAFS

Health Physics Radioactive Material Storage Room (Room 1265A – Exterior Room) Post - Closeout



January 11, 2013

**CLOSE-OUT RADIATION PROTECTION SURVEY - CONTAMINATION RESULTS
BUILDING 49635, HEALTH PHYSICS OFFICE (ROOMS 1264 & 1265A), CCAFS, FL**

The below listed contamination swipes were analyzed in accordance with approved procedures by InoMedic Health Applications Inc. - Health Physics personnel on January 11, 2013.

The subject swipes were below the regulatory limits. Detailed results of the swipes are as indicated below.

Contamination Survey Results (Health Physics Laboratory, Room 1264):

<u>Smear Number</u>	<u>Swipe Location</u>	<u>Test Results (dpm/swipe) (alpha / beta)</u>
1.	Room 1264 - Top of countertop westside of room.	<BKG / <BKG
2.	Room 1264 - Top of countertop westside of room.	0.52 / <BKG
3.	Room 1264 - Top of countertop westside of room.	<BKG / <BKG
4.	Room 1264 - Top of countertop northside of room.	<BKG / <BKG
5.	Room 1264 - Top of countertop northside of room.	<BKG / <BKG
6.	Room 1264 - Inside source storage cabinet – GA.	<BKG / <BKG
7.	Room 1264 - Inside source storage cabinet – GA.	<BKG / <BKG
8.	Room 1264 - Floor where Gamma Products #1 was located.	<BKG / <BKG
9.	Room 1264 - Floor where Gamma Products #2 was located.	<BKG / <BKG
10.	Room 1264 - Top of small sample prep table.	<BKG / <BKG
11.	Room 1264 - Top of sample prep table.	<BKG / <BKG
12.	Room 1264 - Top of sample prep table.	<BKG / <BKG
13.	Room 1264 - Floor general area.	<BKG / <BKG
14.	Room 1264 - Floor general area.	<BKG / <BKG
15.	Room 1264 - Floor general area.	<BKG / <BKG
16.	Room 1264 - Floor general area.	<BKG / <BKG
17.	Room 1264 - Floor general area.	<BKG / <BKG
18.	Room 1264 - Floor general area.	<BKG / <BKG
19.	Room 1264 - Floor general area.	<BKG / <BKG
20.	Room 1264 - Floor general area.	<BKG / <BKG
21.	Room 1264 - Floor general area.	<BKG / <BKG
22.	Room 1264 - Floor general area.	<BKG / <BKG
23.	Room 1264 - Floor general area.	<BKG / <BKG
24.	Room 1264 - Floor general area.	<BKG / <BKG
25.	Room 1264 - Floor general area.	0.85 / 0.93

Background readings were: 0.24 cpm Alpha, 2.62 cpm Beta



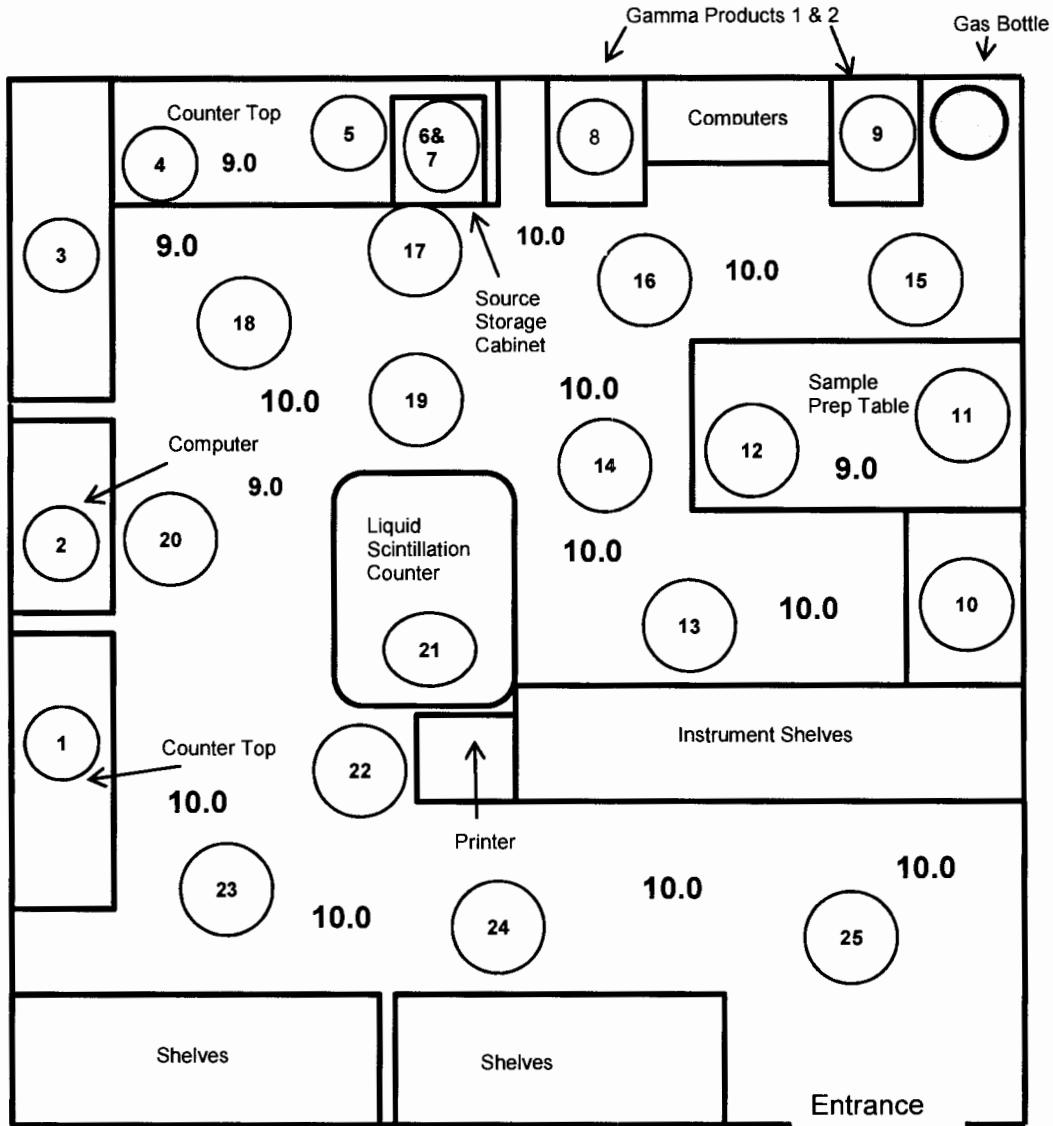
David Lake
InoMedic Health Applications, Inc.
Health Physics

1-11-2013

Date:

Health Physics Office (Health Physics Laboratory – Rm. 1264)

Swipe/Radiation Locations



= Swipe Location and Number of Swipe.

Dose Rates are in uR/Hour.

Background Dose Rate is: 9.0 – 10.0 uR/Hour.

Eberline uR Meter, S/N: 89468, Cal. Due Date: 07-17-2013.

January 11, 2013

**CLOSE-OUT RADIATION PROTECTION SURVEY - CONTAMINATION RESULTS,
BUILDING 49635, HEALTH PHYSICS OFFICE (ROOMS 1264 & 1265A), CCAFS, FL**

Contamination Results - Room 1265A (Health Physics Radioactive Material Storage Room):

<u>Smear Number</u>	<u>Swipe Location</u>	<u>Test Results (dpm/swipe) (alpha / beta)</u>
1.	Room 1265A - Top of table northwest side of room.	<BKG / 1.17
2.	Room 1265A - Top of table northwest side of room.	<BKG / 0.04
3.	Room 1265A - Top of table northeast side of room.	0.66 / <BKG
4.	Room 1265A - Top of table northeast side of room.	<BKG / <BKG
5.	Room 1265A - Floor general area.	<BKG / <BKG
6.	Room 1265A - Floor general area.	<BKG / <BKG
7.	Room 1265A - Floor general area.	<BKG / <BKG
8.	Room 1265A - Inside source storage cabinet.	<BKG / 0.49
9.	Room 1265A - Inside source storage cabinet.	<BKG / 2.30
10.	Room 1265A - Floor general area.	<BKG / 0.04
11.	Room 1265A - Floor general area.	<BKG / 0.95
12.	Room 1265A - Floor general area.	<BKG / <BKG
13.	Room 1265A - Floor general area.	<BKG / 2.98
14.	Room 1265A - Counter top eastside (exterior room).	<BKG / <BKG
15.	Room 1265A - Counter top eastside (exterior room).	<BKG / 1.43
16.	Room 1265A - Floor general area (exterior room).	<BKG / 0.72
17.	Room 1265A - Floor general area (exterior room).	<BKG / 0.72
18.	Room 1265A - Floor general area (exterior room).	<BKG / <BKG
19.	Room 1265A - Storage Shelves (exterior room).	<BKG / <BKG
20.	Room 1265A - Storage shelves (exterior room).	<BKG / 0.49

Background readings were: 0.20 cpm Alpha, 2.08 cpm Beta

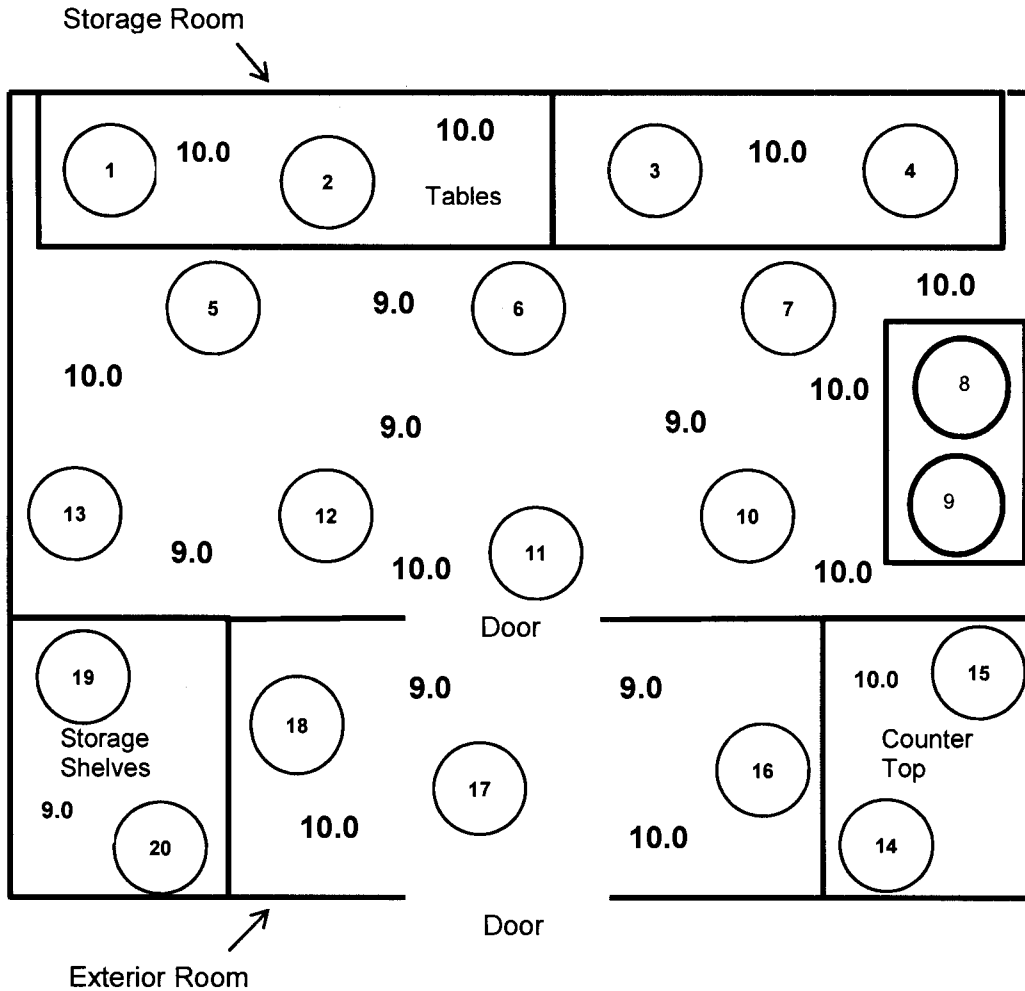



David Lake
InoMedic Health Applications, Inc.
Health Physics

1-11-2013

Date:

**Health Physics Office (Radioactive Material Storage Room & Exterior Area –
Room 1265A) Swipe/Radiation Locations**



 = Swipe Location and Number of Swipe.
 Dose Rates are in uR/Hour.
 Background Dose Rate is: 9.0 – 10.0 uR/Hour.
 Eberline uR Meter, S/N: 89468, Cal. Due Date: 07-17-2013.

HEALTH PHYSICS RADIATION SURVEY RECORD

Date 01-11-2013	Project Close-Out Radiation Protection Survey - Health Physics Office	User Organization InoMedic Health Applications - Health Physics	ARO/Phone No. R.E. Nickell / (321) 861-5218
Location: Use/Storage Area Health Physics Laboratory	Bldg. No. 49635	Room No. 1264	Custodian/Supervisor R.E. Nickell
			Authorization No. K-IR-10000

I. RADIATION SOURCES (MATERIAL/DEVICES)

Material Description	Isotope	Serial No.	Approx. ACT	Form																				
All Radioactive Material and Devices have been Removed.	N/A	N/A	N/A	N/A																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Device, Manufacturer & Yr., Model Number, Serial Number</th> <th style="width: 10%;">Maximum KVP</th> <th style="width: 10%;">Nominal KVP</th> <th style="width: 10%;">Maximum MA</th> <th style="width: 10%;">Nominal MA</th> </tr> </thead> <tbody> <tr> <td>None</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>					Device, Manufacturer & Yr., Model Number, Serial Number	Maximum KVP	Nominal KVP	Maximum MA	Nominal MA	None	N/A	N/A	N/A	N/A										
Device, Manufacturer & Yr., Model Number, Serial Number	Maximum KVP	Nominal KVP	Maximum MA	Nominal MA																				
None	N/A	N/A	N/A	N/A																				

II. AREA DOSE-RATE (GENERAL WORK AREA/BOUNDARY) (MREM/HR or mR/HR)

Source Shielded Max Reading (Net) <u>N/A</u> Min Reading (Net) <u>N/A</u>	Source Unshielded (If required) Max Reading (Net) <u>0.01</u> Min Reading (Net) <u>0.01</u>
--	--

III. CONTAMINATION LEVELS (GENERAL WORK AREA)

Area Wipe Test Conducted <input type="checkbox"/> Work Area Only <input checked="" type="checkbox"/> General Area <input type="checkbox"/> Storage Area/ Storage Device <input type="checkbox"/> Not Required	Removable Beta-Gamma (Field Analysis) Maximum <u>≤ BK6</u> CPM	Removable Alpha (Field Analysis) Maximum <u>≤ BK6</u> CPM
Area Classification Open Area	Removable Beta-Gamma (Lab Analysis) <u>0.93</u> dpm/100CM ²	Removable Alpha (Lab Analysis) <u>0.85</u> dpm/100CM ²

IV. RADIOLOGICAL CONTROL SECTION

Special Monitoring Requirements None - Non-Restricted Area	Access Controls None - Non-Restricted Area
User Representative During Survey N/A	Applicable Regulatory Document(s) KNPR 1860.1, 45th SWI 40-201, NRC

Requirements	Yes	(If not "Yes", explain.)				Remarks
		No	N/A	Posted	On-File	
Warning Signs						Removed
Notice to Employees						Removed
10 CFR 19 & 20			X			
Florida State Rules & Regulations			X			
KNPR-1860.1					X	
KNPD-1860.1			X			
45th SWI 40-201					X	
Operating Procedures			X			
Emergency Procedures						Removed
Exposure Records					X	
Licenses/Regulations					X	USNRC 09-11149-03

Personnel Monitoring Requirements	Yes	No	N/A	Remarks
Badges			X	
Dosimeters			X	
Instrumentation			X	
Contamination Control			X	
Shielding/Special Handling Rqmts.			X	
Other			X	

V. SURVEY RESULTS

- Satisfactory No items of non-compliance or unsafe conditions observed.
- Marginal Minor discrepancies observed as noted below.
- Unsatisfactory Major discrepancies observed as noted below.

Area Sketch: (Show points surveyed and location of wipe samples)
 (Show measured dose rates if above background)

See Attached.

Remarks:

All Radioactive Material and Devices have been removed from this facility. All associated posting, labels and warning signs have been removed. The radiation survey and contamination swipe analysis indicated no levels of radiation above background and no residual contamination levels above regulatory limits.

The subject facility/room can be opened for normal occupancy and use.

The discrepancies noted above have been discussed with me by the Health Physics representative for corrective action.	Orgn.	Date :
	Signature	
Distribution: ARO/User Organization RPO H.R. File	Prepared By: (Health Physics Branch) David Lake <i>David Lake</i>	

HEALTH PHYSICS RADIATION SURVEY RECORD

Date 01-11-2013	Project Close-Out Radiation Protection Survey - Health Physics Office	User Organization InoMedic Health Applications - Health Physics	ARO/Phone No. R.E. Nickell / (321) 861-5218		
Location:	Use/Storage Area Health Physics Rad Material Storage Room	Bldg. No. 49635	Room No. 1265A	Custodian/Supervisor R.E. Nickell	Authorization No. K-IR-10000

I. RADIATION SOURCES (MATERIAL/DEVICES)						
Material Description	Isotope	Serial No.	Approx. ACT	Form		
All Radioactive Material and Devices have been Removed.	N/A	N/A	N/A	N/A		
Device, Manufacturer & Yr., Model Number, Serial Number			Maximum KVP	Nominal KVP	Maximum MA	Nominal MA
None			N/A	N/A	N/A	N/A

II. AREA DOSE-RATE (GENERAL WORK AREA/BOUNDARY) (MREM/HR or mR/HR)			
Source Shielded Max Reading (Net) <u>N/A</u> Min Reading (Net) <u>N/A</u>	Source Unshielded (If required) Max Reading (Net) <u>0.01</u> Min Reading (Net) <u>0.01</u>		

III. CONTAMINATION LEVELS (GENERAL WORK AREA)		
Area Wipe Test Conducted <input type="checkbox"/> Work Area Only <input checked="" type="checkbox"/> General Area <input type="checkbox"/> Storage Area/Storage Device <input type="checkbox"/> Not Required	Removable Beta-Gamma (Field Analysis) Maximum <u>≤ 300</u> CPM	Removable Alpha (Field Analysis) Maximum <u>≤ 300</u> CPM
Area Classification Open Area	Removable Beta-Gamma (Lab Analysis) <u>2.98</u> dpm/100CM ²	Removable Alpha (Lab Analysis) <u>0.66</u> dpm/100CM ²

IV. RADIOLOGICAL CONTROL SECTION						
Special Monitoring Requirements None - Non-Restricted Area			Access Controls None - Non-Restricted Area			
User Representative During Survey N/A				Applicable Regulatory Document(s) KNPR 1860.1, 45th SWI 40-201, NRC		
Requirements	Yes	(If not "Yes", explain.)				Remarks
		No	N/A	Posted	On-File	
Warning Signs						Removed
Notice to Employees						Removed
10 CFR 19 & 20			X			
Florida State Rules & Regulations			X			
KNPR-1860.1					X	
KNPD-1860.1			X			
45th SWI 40-201					X	
Operating Procedures			X			
Emergency Procedures						Removed
Exposure Records					X	
Licenses/Regulations					X	USNRC 09-11149-03

Personnel Monitoring Requirements	Yes	No	N/A	Remarks
Badges			X	
Dosimeters			X	
Instrumentation			X	
Contamination Control			X	
Shielding/Special Handling Rqmts.			X	
Other			X	

V. SURVEY RESULTS

- Satisfactory No items of non-compliance or unsafe conditions observed.
- Marginal Minor discrepancies observed as noted below.
- Unsatisfactory Major discrepancies observed as noted below.

Area Sketch: (Show points surveyed and location of wipe samples)
(Show measured dose rates if above background)

See Attached.

Remarks:

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The subject facility/room can be opened for normal occupancy and use.

The discrepancies noted above have been discussed with me by the Health Physics representative for corrective action.	Orgn.	Date :
	Signature	
Distribution: ARO/User Organization RPO H.R. File	Prepared By: (Health Physics Branch) David Lake <i>David Lake</i>	