Texas Tech University Health Sciences Center

Radiation Safety Manual

Appendix L
El Paso Regional Campus Site-Specific Guidelines

L.1 General

(a) The El Paso Regional Campus Safety Services Manager will serve as the designated representative of the Texas Tech University Health Sciences Center (TTUHSC) Radiation Safety Officer (RSO) for the El Paso Regional Campus. The Manager will represent the TTUHSC RSO on matters concerning the administration of the TTUHSC Radiation Safety Program at the El Paso Regional Campus.

(b) The Manager will possess appropriate, documented training and experience in radiation safety, to include as a minimum, the topics outlined in 25 TAC §289.252(ii)(1). In addition, the Manager will intern at TTUHSC – Lubbock to become familiar with administration of the overall TTUHSC Radiation Safety Program.

L.2 Regional Campus Safety Services Manager

(a) The Regional Campus Safety Services Manager acts as the designated representative of the TTUHSC RSO on matters concerning implementation of policies, practices, and guidelines established by the TTUHSC Radiation Safety Committee for the El Paso Regional Campus.

(b) The responsibilities the Regional Campus Safety Services Manager include, but are not limited to the following:

(1) Terminate any operation that the Manager determines is causing a radiation hazard or is in violation of applicable regulations;

(2) Disseminate information concerning radiation safety and radiological health;

(3) Perform monthly audits of authorized radioactive material users;

(4) Receive, process and deliver all shipments of radioactive material received at the Regional Campus;

(5) Prepare all shipments of radioactive material to be shipped from the Regional Campus;

(6) Provide radioactive/special waste disposal services for all Sublicensees;

(7) Maintain comprehensive files and records of the receipt, use, storage, and disposal of radioactive material;

(8) Maintain comprehensive files and records on all matters pertinent to the Radiation Safety Program at the Regional Campus;

(9) Coordinate the use and distribution of personnel dosimetry devices;

(10) Except in extreme emergencies, obtain advice and guidance from the RSO for radiation safety matters not specifically addressed in the TTUHSC *Radiation Safety Manual*.

L.3 Radioactive Material Accountability

(a) Order approval for radioactive material will be processed through the Regional Campus Safety Services Office, coordinated with Radiation Safety Services – Lubbock to maintain continuity and proper sequencing of orders. Radioactive material will be ordered as outlined in Section 3 of the TTUHSC *Radiation Safety Manual*.

(b) Incoming shipments of radioactive material shall be delivered to the designated receiving area for the Regional Campus. The shipments will be placed in an area designated for temporary storage of radioactive material shipments.

(c) Shipping/receiving personnel will notify the Manager or designee when any radioactive material package has been received.

(d) The Manager or designee will take possession of the radioactive material package(s) and process them according to the guidelines of Section 3 and Section 5 of the TTUHSC *Radiation Safety Manual*.

(e) No radioactive material shipments will be accepted outside of normal business hours.

(f) A Radioactive Material Receipt and Accountability Record (RSS Form A-05) will be completed and delivered with the radioactive material to the Sublicensee, or the Sublicensee will be informed that the package has been processed and that arrangements can be made to pick up the package and receipt.

(g) Upon receipt of the radioactive material and forms, the Sublicensee will verify that the shipment arrived as ordered, then sign and date the receipt appropriately.

L.4 Radioactive Waste Disposal

(a) General

(1) Texas Tech University Health Sciences Center (TTUHSC) "Specific Waste" as defined in Section 6 of the TTUHSC *Radiation Safety Manual* shall be deposited in the El Paso Municipal Landfill named (Clint Landfill), located approximately 22 miles East of the El Paso Regional Campus (5001 El Paso Drive, El Paso, TX), and approximately 1 mile North of Interstate 10/US Hwy on Darrington Road. All road surfaces leading to the facility are paved, all-weather surfaces, maintained by city, county, and state maintenance services.

(2) Specific waste that satisfies the criterion of 25 TAC §289.202(fff) will be transported to the Clint Landfill in a vehicle owned or leased, and operated by Texas Tech University (TTU), Texas Tech University Health Sciences Center (TTUHSC), or TTUHSC Safety Services (SS). The vehicle used will be enclosed on top and all sides, such as a step van, cargo van, or covered pickup truck. Personnel delivering the specific waste to the disposal facility will be TTUHSC Radiation Safety Services (RSS) personnel, or other TTUHSC personnel who have been specifically trained in the methods and appropriate guidelines for safe handling of the types of waste involved.

(b) Quality Control

(1) Assurance of the contents of waste containers will primarily be derived from information listed on the "Radioactive Waste Disposal Record" (RSS Form A-06). The types and activities of radioisotopes contained in the waste containers should be compared with the radioisotopes and activity limits of the Radioactive Material Sublicensee generating the waste.

(2) If the results of the above assurance process warrant, or if the waste is from a laboratory in which "other" isotopes are used, quality control sampling may be conducted on the contents of the waste container for analysis by RSS personnel.

(3) A representative number (not less than ten percent or more than 25 percent) of the waste containers awaiting disposal will have quality control sampling performed on the contents. Quality control sampling is conducted for the purpose of insuring compliance with 25 TAC §289.202(fff)(5). The following types of analysis will be performed:

(A) A gross gamma survey will be conducted on all waste packages using an appropriate portable survey instrument. The survey will be performed slowly and methodically, scanning the outer surfaces of the waste container with the instrument. This survey is performed to check for potentially high

concentrations of gamma emitting isotopes. The gross gamma survey will be the only survey conducted on containers of frozen tissue and/or animal carcass waste.

(B) Dry (solid) and liquid scintillation vial waste containers selected for quality control checks shall be opened by RSS personnel, and a representative number (not less than 5, no more than 20) of contamination wipe samples shall be taken from the contents of the waste container. The samples shall be taken from random locations throughout the container. These samples will be analyzed using a liquid scintillation counting system, and/or a gamma scintillation counting system, whichever is appropriate for the waste involved, to verify the absence of unauthorized isotopes.

(C) Bulk liquid waste containers selected for quality control checks shall be opened by RSS personnel, and after thorough mixing, a representative number of liquid samples (greater than or equal to 2, less than or equal to 5) shall be taken from the contents of the waste container. The samples will be analyzed by liquid scintillation counting using a wide spectrum program to verify the absence of unauthorized isotopes.

(D) When quality control analysis indicates the presence of radioactive material other than that specified in 25 TAC §289.202(fff)(1) or 25 TAC §289.202(ggg)(7), the particular waste package will be classified and processed for commercial disposal or storage. The Radioactive Material Sublicensee generating the waste will be informed of the situation and instructed in the methods of proper radioisotope waste segregation. In the event of a recurrence of this problem from the same Sublicensee, the situation will be brought to the attention of the Radiation Safety Committee (RSC) for review, evaluation, and determination of any disciplinary action necessary.

(E) The results of all quality control analysis will be maintained as required by 25 TAC §289.202(fff)(7).

(c) Packaging

(1) TTUHSC specific waste will be separated according to physical type at the point of generation (user location). The six (6) primary physical types include the following:

(A) Dry/solid waste;

(B) Aqueous liquid scintillation vials;

(C) Organic liquid scintillation vials;

(D) Aqueous bulk liquid;

(E) Organic bulk liquid; and

(F) Animal tissue/carcass waste.

(2) Dry/solid waste

(A) Dry/solid waste will typically be collected at the user location in 20-gallon polyethylene containers lined with at least two (2) heavy-gauge poly liners; in lined, 5-gallon poly containers; or in lined, specially-constructed containers designed for collection or storage of radioactive waste. When full, all containers will be collected from the user location and delivered to the Regional Campus waste staging area by Regional Campus Safety Services personnel. Those containers requiring commercial disposal or on-site storage for reasons of hazardous material content or radioactive material, will be packaged for disposal by Regional Campus Safety Services personnel in the processing room. Packaging will be as required by the commercial disposal company or by applicable regulation.

(B) Dry/solid waste that satisfies the criterion of 25 TAC §289.202(fff) will be placed, whenever practicable, into corrugated boxes in preparation for disposal in the approved municipal solid waste facility. The only markings on these boxes will be the assigned waste inventory number; the initials of the personnel preparing the box; the weight of the box; and the date the box was sealed. Prior to sealing the boxes, personnel will insure through the quality assurance checks and/or through administrative verification that the radioactive material concentrations satisfy the criterion of 25 TAC §289.202(ggg)(7).

(3) Liquid scintillation vials

(A) Liquid scintillation vials will typically be collected at the user location in 20-gallon polyethylene containers lined with at least two (2) heavy-gauge poly liners; in lined, 5-gallon poly containers; or in lined, specially-constructed containers designed for collection or storage of liquid scintillation vial waste. When full, all containers will be collected from the user location and delivered to the RSS waste staging area by RSS personnel. Those containers requiring commercial disposal or on-site storage for reasons of hazardous material content (organic liquid scintillation cocktail) or radioactive material, will be packaged for disposal by RSS personnel in the processing room. Packaging will be as required by the commercial disposal company or by applicable regulation.

(B) General liquid scintillation vial packaging guidelines are as follows:

(i) Open and inspect the empty 55-gallon steel disposal drum for holes or leaks. Replace drum if found defective;

(ii) Place a heavy-gauge poly liner in the drum;

(iii) Place 4 to 6 inches of absorbent in the liner within the drum;

(iv) Place a second heavy-gauge poly liner in the drum;

(v) Add liquid scintillation vials to within no less than 3 inches from the top of the drum (do not add absorbent to the inner liner with the vials);

(vi) Prior to sealing the container, RSS will insure through quality assurance checks and/or through administrative verification that the radioactive material concentrations contained in the drum satisfy applicable transport and disposal regulations.

(vii) Close and seal the inner and outer liners, close the drum and install the locking ring;

(viii) These guidelines will be observed unless the commercial disposal company or applicable regulations specify otherwise;

(ix) The only markings on these containers will be the assigned waste inventory number; the initials of the personnel preparing the container; and the date the container was sealed.

(4) Aqueous bulk liquid waste

(A) Aqueous bulk liquid waste will be collected in poly carboys or similar containers with a capacity of 2.5 gallons or less. When full, all containers will be collected from the user location and delivered to the RSS waste staging area by RSS personnel. Those containers requiring commercial disposal or on-site storage for reasons of hazardous material content (organic liquids) or radioactive material, will be packaged for disposal by RSS personnel in the processing room. Packaging will be as required by the commercial disposal company or by applicable regulation. The only markings on these containers will be the RSS assigned waste inventory number; the initials of the RSS personnel preparing the container; and the date the container was

sealed. Prior to sealing the container, RSS will insure through quality assurance checks and/or through administrative verification that the radioactive material concentrations contained in the carboy satisfy applicable regulations.

(B) Bulk liquid waste that satisfies the criterion of 25 TAC §289.202(gg) may be disposed of by release into the sanitary sewer system.

(5) Organic bulk liquid waste will be collected in poly carboys or similar containers with a capacity of 2.5 gallons or less. When full, all containers will be collected from the user location and delivered to the RSS waste staging area by RSS personnel. Those containers requiring commercial disposal or on-site storage for reasons of hazardous material content (organic liquids) or radioactive material, will be packaged for disposal by RSS personnel in the processing room. Packaging will be as required by the commercial disposal company or by applicable regulation. The only markings on these containers will be the RSS assigned waste inventory number; the initials of the RSS personnel preparing the container; and the date the container was sealed. Prior to sealing the container, RSS will insure through quality assurance checks and/or through administrative verification that the radioactive material concentrations contained in the carboy satisfy applicable regulations.

(6) Animal tissue/carcass waste

(A) Animal tissue/carcass waste containing radioactive material that satisfies the criterion of 25 TAC §289.202(fff) for disposal in the approved municipal solid waste facility will be sealed in heavy-gauge poly bags at the user location. These bags will then be sealed in a secondary heavy-gauge poly bag. The user will place an identifying tag/label on the outer bag that will include the following information:

(i) The name of the Sublicensee;

(ii) The initials of the individual preparing the waste;

(iii) The date of waste preparation;

(iv) The weight of the animal tissue/carcass waste;

(v) The radioisotope(s) contained in the waste; and

(vi) The activity of each isotope in the waste.

(B) The animal tissue/carcass waste will be kept in a locked freezer at the user location while awaiting disposal by RSS.

(C) If the waste satisfies the criterion of 25 TAC §289.202(fff) for disposal in the approved municipal solid waste facility and commercial disposal or storage is not required, the waste will be collected by RSS personnel and prepared for disposal. The waste bag(s) will be placed in a corrugated box, and RSS personnel will remove the waste identification tag/label and label the box with only the RSS assigned waste inventory number; the initials of the RSS personnel preparing the container; and the date the container was sealed. If the animal tissue/carcass waste satisfies the criterion of 25 TAC §289.202(fff) for disposal in the approved municipal solid waste facility, disposal will be the same as that specified for dry/solid waste meeting the same criteria.

(D) If the animal tissue/carcass waste requires commercial disposal, packaging will be as required by the commercial disposal company or by applicable regulations.

(7) The obliteration and/or removal of "Radioactive" signs, symbols, and markings will be accomplished either at the time RSS delivers the radioactive material to the authorized user, or by the user prior to placing the containers into the laboratory dry waste container. Periodic quality control compliance surveys and audits will provide RSS an opportunity to verify compliance. Compliance with 25 TAC §289(fff)(5)(B) will be through the double packaging of waste material.

L.5 Waste Records

(a) The following records will be maintained coincidental to the collection, processing, and disposal of radiological/special waste:

(1) Radioactive Waste Disposal Record (RSS Form A-06)

(2) Radioactive Waste Quality Control Survey (RSS Form A-19)

(3) Waste Disposal Summary Report

(4) Commercial disposal receipts/records

(b) Waste forms may be changed or modified by RSS as necessary, however, the information collected and summaries made will satisfy the requirements of applicable regulations.

(c) Records will be maintained by RSS as specified by applicable regulations or until such time as TDSHS-RC authorizes records disposal.

(d) Following is a brief explanation of each waste form and summary report:

(1) Radioactive Waste Disposal Record

(A) The "Radioactive Waste Disposal Record" (RSS Form A-06) is a carbonless, multi-page form that is provided to the various radioactive material users by RSS. As radioactive/special waste is deposited in the appropriate radioactive/special waste container, appropriate entries are made on the form for each radioactive isotope contained in the waste. Information entered on the form includes the following:

(i) Sublicensee name;

(ii) Department;

(iii) Telephone number;

(iv) Type of waste;

(v) Composition of waste (aqueous, organic, etc.);

(vi) Date of disposal (date waste deposited in container);

(vii) Name of individual depositing waste;

(viii) Laboratory room number;

(ix) Isotope disposed;

(x) Activity per isotope (in activity units specified on the form); and

(xi) Weight or volume of the disposed waste.

(B) The Sublicensee or radiation worker will total the activities and weights or volumes for each isotope listed on the form and record these totals in the appropriate section of the form.

(C) Upon completion of the form, RSS may be notified that the waste container is ready for disposal.

(2) The "Radioactive Waste Quality Control Survey" (RSS Form A-19) form will be used to Document external and internal quality control sampling of waste

packages. All appropriate information identifying the contents of the waste container and the methods used to test the contents will be listed on and/or attached to the form.

(3) The "Special Waste and Animal Carcass Disposal Summary" (RSS Form A-14) will be used to summarize each disposal containing special waste material.