July 7, 2025

Radiation Protection Program Review 2024

Texas A&M University

Environmental Health and Safety
(979) 845-2132
https://ehs.tamu.edu

Table of Contents

INTRODUCTION

This document provides a review of the Radiation Protection Program for Texas A&M University over the 2024 calendar year. The topics covered include an overview of the Protection Program scope and organization, followed by a review of specific elements. Components which are vital to the strength of the program, such as training and maintenance of ALARA practices are appraised. In addition to these items, a review of routine practices, such as waste disposal, internal and external audits and inspections, and changes to the program are addressed.

TEXAS A&M UNIVERSITY LICENSES AND REGISTRATIONS

Texas A&M University holds several federal and state licenses and registrations, which authorize the use of byproduct radioactive materials, source materials, special nuclear materials, and radiation-producing devices (both ionizing and non-ionizing). In accordance with state and federal regulations (25 TAC §289.202 (e) (3) and 10 CFR 20.1101(c), respectively) this report reviews the activities conducted under the licenses and registrations for the calendar year 2024. Table 1 shows an overview of the various licenses maintained by Texas A&M University.

Table 1 – Texas A&M University Licenses and Registrations

License No.	Issuing Agency	Expiration Date	Description
42-09082-09	United States Nuclear Regulatory Commission (USNRC)	October 31, 2033	Radioactive Materials License, Use aboard JOIDES (SEDCO/BP 471) and any other TAMU research ship
L00448	Texas Department of State Health Services (TDSHS)	September 30, 2029	Radioactive Materials License, TAMU, College Station, Bryan, Houston, Galveston, and Dallas
L05683	Texas Department of State Health Services (TDSHS)	August 31, 2034	Radioactive Materials License, TAMU College Station, Bryan, University Services Bldg., RELLIS, Prairie View A&M, Beeville, Bushland, Dallas, Lubbock, Overton, Plainview, Uvalde, Vernon, and Weslaco
L06561	Texas Department of State Health Services (TDSHS)	July 31, 2033	Radioactive Material License, Texas A&M University Cyclotron Institute
R00304	Texas Department of State Health Services (TDSHS)	September 30, 2031	Certificate of X-Ray Registration, Texas A&M University Main campus, College Station, RELLIS campus, Beeville, Prairie View A&M, Galveston, Stephenville, Huntsville, Kirbyville, Bryan, and Houston
R14497	Texas Department of State Health Services (TDSHS)	February 28, 2026	Certificate of Registration for Industrial Radiation Machines-JOIDES Research Vessel

Z00116	Texas Department of State Health Services (TDSHS)	April 30, 2029	Certificate of Registration for Lasers, Texas A&M University, College Station, RELLIS, Galveston, Riverside parkway, Bryan, Kingsville, Houston, Prairie View A&M, Lubbock, and Stephenville

42-09082-09

The U.S. Nuclear Regulatory Commission issues this license. It authorizes the University to use selected radionuclides at temporary job sites at sea aboard TAMU and other research vessels. The license expires on October 31, 2033.

L00448

The Texas Department of State Health Services (TDSHS) issues this broad scope license. This license authorizes the use of radioactive materials at the following sites: Texas A&M University- College Station, Bryan, Galveston, Institute of Biosciences and Technology-Houston, and Texas A&M College of Dentistry-Dallas. Four amendment requests were submitted in 2024. Amendment 165 was approved for adding ORNL sources for nuclear detection exercises, Amendment 166 for adding “records only site”. Amendment 167 for extension of the exemption condition for Category II source located a Nuclear Engineering and Science Center. Amendment 168 submitted for removing Dallas site. The license expires on September 30, 2029.

L05683

The Texas Department of State Health Services issues this specific license. This license authorizes the use of radioactive materials at designated remote sites inside Texas. The license includes Prairie View A&M University, Texas A&M Agrilife sites at Beeville, Lubbock, Plainview, Uvalde, Vernon, Weslaco, Bushland, and Dallas. Unlike the broad scope license L00448, license L05683 is specific regarding the radioactive materials that may be possessed, as well as the individuals authorized to use the materials. Amendment 47 approved for adding “Records Only" site, amendment 48 for adding additional users one at Prairie View and another at RELLIS. The license is renewed, and the new expiration date is August 31, 2034.

L06561

The Texas Department of State Health Services issues this specific license. It authorizes Texas A&M University Cyclotron Institute to produce radioactive material for research and development. Unlike the broad-scope license L00448, this license is specific regarding the radionuclides that can be produced using the cyclotron and the individuals authorized to possess,

and use those radionuclides. One amendment request was submitted in 2024. Amendment 10 approved the change of the text in the license for authorized use. The license expiration date is July 31, 2033.

R00304

This registration is issued by The Texas Department of State Health Services and authorizes the University to possess and use radiation producing devices at the University main campus and with additional sites at University Services Building, RELLIS, Beeville, Prairie View A&M University, Galveston, Stephenville, Huntsville, HSC-Bryan campus, IBT Houston, TMC-3 Helix Ave and Texas Health Hub. Three amendment requests were submitted. The first one added site 021-Texas Health Hub and terminated a previous registration R34597. The second one was to update the Use Categories and change the number of units at site 004 Prairie View Third amendment was to remove site 014-Kirbyville. The Certificate of Registration was renewed in August 2024, and the new expiration date is September 30, 2031.

R14497

This registration, issued by The Texas Department of State Health Services, authorizes the University to possess and use minimal threat and other industrial X-ray units aboard the JOIDES research vessel. In 2024 JOIDES vessel was decommissioned, and all units were transferred to Texas A&M University. Amendment to terminate this registration will be requested after completion of the transfer to R00304.

Z00116

This registration, issued by The Texas Department of State Health Services and authorizes the possession and use of Class III B and Class IV lasers at the College Station Campus, Bryan, RELLIS, Galveston, Kingsville, Institute of Biosciences and Technology (IBT)-Houston, Prairie View A&M University, Lubbock, and Stephenville. One amendment request was submitted in 2024. The amendment added a site at TMC3 in Houston and a “records only site” at the EHS office. The Kingsville site was removed from the registration. The number of laser units at multiples sites were increased. The registration expires on April 30, 2029.

RADIOLOGICAL SAFETY PROGRAM ORGANIZATION

Radiological Safety Committee

The Radiological Safety Committee (RSC) advises the Texas A&M University administration on matters related to radiological safety and recommends policies and procedures it deems appropriate to ensure an adequate radiological safety program. The RSC consists of at least six voting members, including the Chair, appointed by the Chief Operating Officer and Senior Vice President, or designee Asst. Vice President, Environmental Health and Safety.

The RSC functions as an advisory body to ensure that radioactive materials are safely used in accordance with "As Low As Reasonably Achievable (ALARA)" principles. The RSC also conducts audits of key areas of the radiation safety program typically three times a year in which the entire program is reviewed over a period of three years. The RSC met three times during the 2024 calendar year.

Members	Department
Bryan Tomlin, Chair, Ph.D.	Center for Chemical Characterization
Jonathan Sczepanski, Ph.D.	Chemistry
Nattamai Bhuvanesh, Ph.D. (New)	Chemistry
Thomas Welsh, Ph.D.	Animal Sciences
Kris Hagel, Ph.D.	Cyclotron Institute
Jay Griffin, DVM	Large Animal Clinical Sciences
Ky Pohler, Ph, D.	Animal Science
Malcolm Delovio, Ph.D.	Texas Veterinary Diagnostic Laboratory
Timothy Devarenne, Ph.D.	Biochemistry & Biophysics
Latha Vasudevan, Ph.D., CHP, *Ex-Officio*	Director, Radiological Safety Officer
Christina Robertson, CIH, CSP, *Ex-Officio*	Asst. Vice President, Environmental Health and Safety

Radiological Safety Staff

The Radiological Safety Staff (RSS) consists of individuals employed by Environmental Health and Safety, under the direction of the Radiological Safety Officer (RSO). In 2024, the RSS consisted of the RSO; One Senior Health Physicist /Assistant RSO; One Senior Health Physicist; Two Health Physicists; One Assistant Health Physicist II; Two Assistant Health Physicist I; One Assistant Health Physicist I (Dosimetry Program Support); One Radiation Safety Specialist II; One Radiation Safety Specialist I; and 5-6 student technicians.

RADIOLOGICAL SAFETY PROGRAM ELEMENTS

Overview of Permits

Texas A&M Radiological Safety maintains three diverse kinds of radiation permits: Radioactive Material (RAM) permits, Radiation Producing Device (RPD) permits, and Laser permits. The NRC and TDSHS licenses are blanket licenses for the entire university. To adequately maintain oversight, Radiological Safety issues permit, or sub-licenses, to principal investigators authorizing them to possess and use specific quantities of RAM or specific devices. As of December 2024, there were a total of 78 RAM permits, 70 RPD permits possessing a total of 143 RPDs, and 116 laser permits possessing a total of 547 laser units. All RAM and RPD

permit applications/amendments were reviewed by the RSC members. The Laser Safety Review Committee (LSRC) reviewed all laser permit applications/amendments.

Radiological Safety Training

During 2024, several types of training were offered by EHS. There was a total of 22 live training sessions offered; 12 for General Radiation Safety Initial training; nine for Veterinary Hospital Radiation Safety Initial training; and one DEXA training. A total of 476 people were trained in these sessions. An additional 3,736 people were trained via online training modules. Online courses offered include refresher training for General Radiation Safety, refresher training for Veterinary Radiation Safety, General Radiation Producing Device (RPD), Laser Safety, MRI Safety, and Transportation Training for Moisture Gauge Users. A summary of training provided by the Radiological Safety Staff in 2024 is displayed in Table 2.

Table 2– Summary of training provided by RSS in 2024

Training Type	Number of Times Offered in 2024	Number of Individuals Attended Training
General Radiation Safety Initial (Hybrid)	12	203
Veterinary Radiation Safety Initial (Hybrid)	9	244
General Laser Safety (Online)	--	1,134
General Radiation Producing Device -RPD (Online)	--	711
Electron Beam Facility RPD Training (Online)	--	75
General Radiation Safety Refresher (Online)	--	324
Transportation Training for Moisture Gauge Users (Online)	--	81
Veterinary Hospital General Radiation Safety, Laser, and RPD Refresher (Online)	--	342
Veterinary Radiation Producing Device -Vet RPD (Online)	--	388

DEXA Radiation Safety	1	29
Other (Radiation Safety Awareness for Vet, MRI Safety, etc.)	--	681
Total	**22**	**4,212**

Instrument Calibration

Radiological Safety provides response check services for instrumentation used by labs to verify their operation and efficiency. Radiological Safety also facilitates the shipping and paperwork for instruments requiring calibration by outside entities. In 2024, 78 portable survey instruments were shipped to the manufacturer for calibration. RSS provided functional response checks for 73 instruments. Annual Calibrations were performed for 144 pocket ion chambers.

Radioactive Material Packages Received/Shipped

Radiological Safety received and managed 116 radioactive material packages in 2024. These packages were inventoried and delivered to the corresponding Texas A&M laboratories. Thirteen radioactive packages were shipped to other licensed facilities outside of Texas A&M, eight of which were cyclotron produced Astatine-211.

Surveys Performed.

Radiological Safety Staff (RSS) performed monthly contamination and compliance surveys of 105 laboratories in twenty-seven different buildings, as well as special, as-needed, remote sites, and closeout surveys. In 2024, there were 520 surveys performed – an average of forty surveys per month. RSS performed weekly surveys on the radiological safety laboratory, vehicles, and waste storage locations.

Sealed Sources & Leak Tests

Radiological Safety provides leak test services to authorized users with certified sealed sources. Quarterly Leak Tests were performed on all the sealed sources. These services were also provided as a courtesy, to users possessing sources authorized under a general license. In 2024, leak tests were completed for 96 sealed sources (17 of which are neutron soil moisture gauges), and 18 “generally licensed” sources such as Ni-63 in gas chromatographs.

Special Nuclear Material

Special Nuclear Materials (SNM) possessed by the University are inventoried and verified by RSS on an annual basis. The RSS performs inventory verifications and prepares reports as

required by 10 CFR 74 and the Nuclear Material Management and Safeguards System (NMMSS). These NMMSS reports were filed for the period 1/1/2023-12/31/2024 and were reconciled on February 3, 2025.

Review of External Dosimetry Data

This section addresses external dosimetry for the calendar year 2024. Through the end of 2024, 1,842 individuals were monitored for external occupational radiation exposure. Of those monitored, 1,184 people (about 64%), had no reportable whole-body deep dose equivalent (DDE) above background. Of the remaining 657 individuals, nine individuals received doses exceeding 10% of the whole-body annual limit, or 500 mrem. These individuals received doses of 532 (44+488 externship),567(Minimal+ 567 externship), 808 (5+800 externship), 595, 1080, 1249, 1425, 1609, and 2093 mrem. Three individuals received doses during their externship rotation outside of Texas A&M University. The remainder received doses ranging from 1 mrem to 500 mrem. The cumulative dose for all individuals monitored for the entire year was 30.3 person-rem. The average deep dose equivalent for those who received a measurable dose was approximately 13 mrem. A summary of this data is provided in Table 3 and Figure 1. The average DDE values shown in this table are deep dose equivalent averaged over individuals receiving a non-zero dose. Personnel were also monitored for whole-body shallow dose equivalent (or "skin dose," SDE) and dose equivalent to the lens of the eye (LDE). The highest SDE reported in 2024 was 2,049 mrem. The highest LDE reported in 2024 was 2,093 mrem. In addition to whole body dosimeters, several users were issued extremity dosimeters to measure dose to the hand, when applicable. The highest extremity equivalent noted for 2024 was 2,869 mrem. The annual limit for DDE is 5 rem (5000 mrem), LDE is 15 rem (15,000 mrem) and SDE is 50 rem (50,000 mrem).

The individuals with the highest reported doses work in Nuclear Medicine and Diagnostic Radiology at the Veterinary Teaching Hospital. Diagnostic and interventional procedures, such as X-ray, computed tomography, and fluoroscopy are common in the Veterinary Teaching Hospital, and account for most doses received on campus.

For those individuals who received total effective dose equivalent of 100 mrem or higher, an annual dose report was provided as per 25 TAC 289.203(d). All occupational dose reports are on permanent files at Texas A&M University Environmental Health and Safety.

Table 3 - Summary of whole-body dose (DDE) by subaccount number

Department	Number Measured	Number w/ Measured Dose	Cumulative DDE (mrem)	Avg. DDE (mrem)	Max. DDE (mrem)
4th year students	577	255	8,259	32	808
Athletics	10	0	0	0	0
Student Health Center	4	2	6	3	3
Bio	1	0	0	0	0

CCCA	3	0	0	0	0
Cyclotron Institute	576	10	733	73	476
E-beam	19	0	0	0	0
EHS	30	14	56	4	21
GI	22	2	10	5	6
Human Clinical	2	1	1	1	1
IBT	1	0	0	0	0
JOIDES Research Vessel	1	0	0	0	0
LA/Med Surg	38	13	853	66	282
LA/Res Int	32	17	632	37	150
Monthly	49	32	12105	378	2093
Nuclear Eng.	34	18	184	10	62
Office of the State Chemist	2	0	0	0	0
RELLIS	5	0	0	0	0
SA/Fac Med	23	19	589	31	210
SA/Res Int	85	77	1569	20	352
SA/Spec	18	17	300	18	166
School of Public Health	2	0	0	0	0
Staff/Anes	19	15	902	60	231
Staff/LA ICU	31	4	250	63	173
Staff/LA Med	32	16	278	17	79
Staff/LA OR	32	7	387	55	275
Staff/Misc	9	7	105	15	27
Staff/RAD	3	2	420	210	407
Staff/SA Cardio	4	2	20	10	15
Staff/SA Dental	3	2	25	13	13
Staff/SA ER	46	36	1207	34	136
Staff/SA Int Med	12	8	89	11	24
Staff/SA Neuro	4	1	7	7	7
Staff/SA Onco	13	9	353	39	236
Staff/SA OR	46	38	566	15	105
Staff/SA Ortho	20	12	143	12	44
Staff/SA SX	6	6	80	13	39
TAES2	3	0	0	0	0
TIPS	11	1	5	5	5

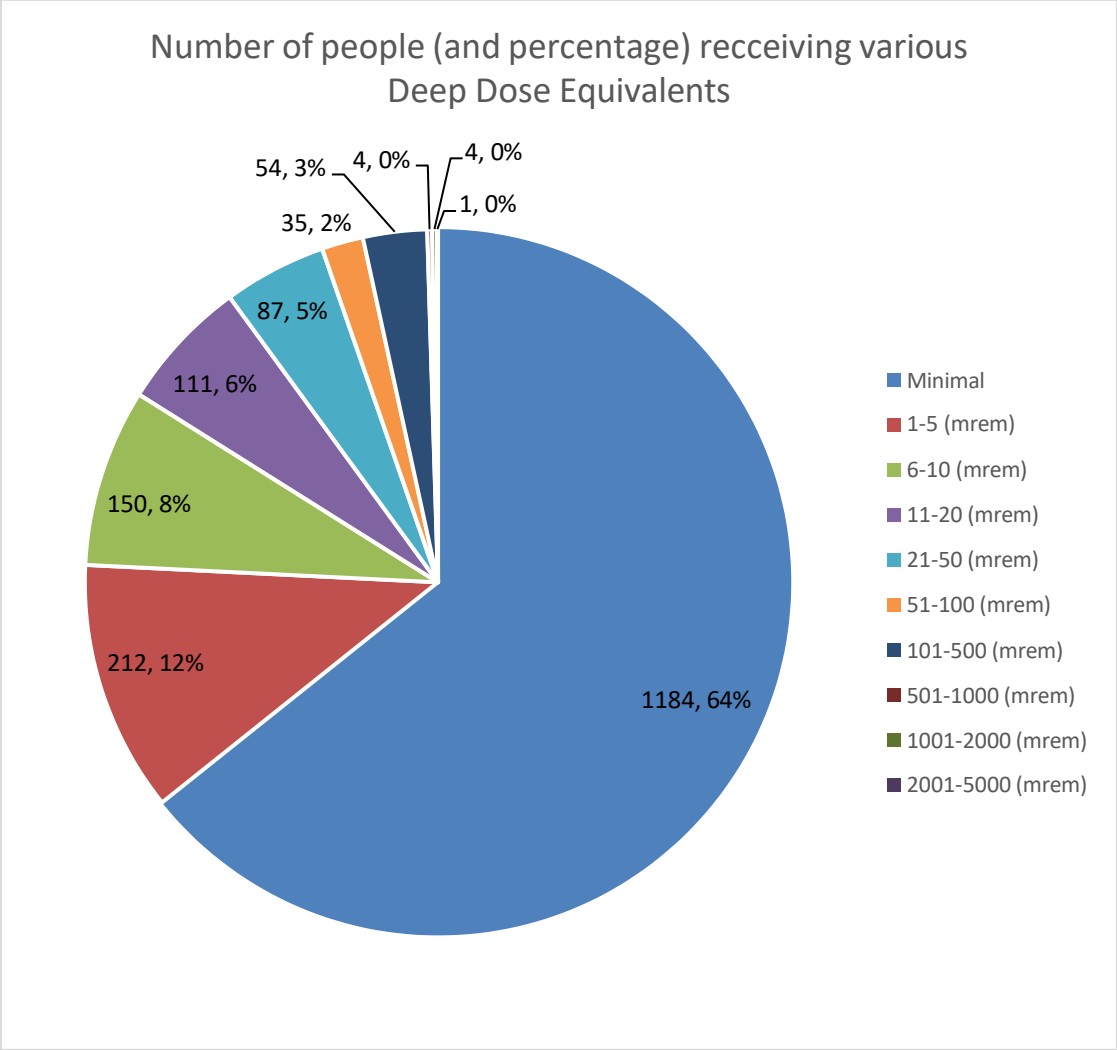

Figure 1 - The number of people receiving various values of whole-body deep dose equivalent exposures is shown. M: "Minimal" indicates no measurable dose above background.

Review of Internal Dosimetry Data

There were 77 routine post-work thyroid screening bioassays performed for I-125. No bioassays were performed for I-131 as there was no use of I-131. Urine bioassays were performed for RSS who participated in waste sorting. None of the bioassays performed required additional investigation.

Radioactive Waste Disposal

In 2024, three solid waste disposals to the local landfill were conducted via disposal methods allowed under the Texas Administrative Code (TAC), 25 TAC §289.202(fff)(1)(A), 25 TAC §289.202(fff)(1) B, 25 TAC §289.202(fff)(4) and 25 TAC §289.202(ggg)(7).

Landfill disposals consisted of short-lived waste (P-32, S-35, I-125, Tc-99m, F-18, and Sn-117m) and long-lived waste (H-3, C-14). Details of the disposal including weight, volume, and total activity are included in Table 4.

Table 4 - Summary of 2024 Landfill Disposals

Date	Radionuclides	Volume (m^3) Or Weight (pounds)	Activity (mCi)
February 9, 2024	^{3}H and ^{14}C	242.3 lbs	0.060
	All Other Short-Lived Wastes	6.36 m^3	0.258
July 26, 2024	^{3}H and ^{14}C	135.7 lbs	0.209
	All Other Short-Lived Wastes	7.15 m^3	0.492
October 24, 2024	^{3}H and ^{14}C	563.0 lbs	0.728
	All Other Short-Lived Wastes	4.90 m^3	2.251

Three liquid waste disposals were conducted in 2024. The total activity of all radionuclides released via the sanitary sewer in 2024 was 5.08 mCi. The total activity concentration for the year was 2.21E-08 μCi mL^{-1}. The sum of the ratios of the radionuclides disposed was 5.44E-04 which is significantly less than 1. All these values are well below the limits stated in 25 TAC 289.202 (ggg) regarding the discharge of radionuclides via sanitary sewer. Table 5 shows the summary of liquid waste disposals.

Table 5 – Summary of 2024 Liquid Disposals to the Sanitary Sewer

Radionuclide	^{3}H	^{14}C	^{32}P	^{33}P	^{35}S	^{125}I
Yearly Total (mCi)	0.3678	2.3313	0.0465	0.0000	0.0004	2.3337

Activity Concentration (µCi/mL)	1.60E-09	1.01E-08	2.02E-10	0.00E-00	1.66E-12	1.01E-08
25TAC289.202(ggg) Table III limits (µCi/mL)	1.00E-02	3.00E-04	9.00E-05	8.00E-04	1.00E-03	2.00E-05
Ratios of Concentration to limits	1.60E-07	3.38E-05	2.25E-06	0.00E-00	1.66E-09	5.07E-04

*Sum of the ratios: 5.44E-04 which is less than 1
Shipment of waste to the Texas low-level waste disposal facility or other disposal sites was conducted through the waste broker Bionomics, Inc. In 2024, there were three waste shipments from Texas A&M University, College Station. Table 6 shows the summary of waste disposed of through Bionomics.

Table 6 – Summary of 2024 Waste Disposals through Bionomics

Date	Number	Container	Category	Activity (mCi)
1/12/2024	1	55-gallon drum	Compacted dry solid	15.82
	3	55-gallon drums	Vials	0.389
04/16/2024	3	55-gallon drums	Solid	6.803
	2	55-gallon drums	Compacted dry solid	0.196
	1	5- gallon plastic bucket	Primary vials and standards	7.349
10/14/2024	3	55-gallon drums	Compacted dry solids	0.009
	2	55-gallon drums	Vials	0.977
	1	5-gallon metal bucket	Miscellaneous sources	40

POLICIES & PROCEDURES

As part of license renewal for L05683, the radioactive material procedure manual and laboratory procedure manual were updated.

In 2024, the Texas Department of State Health Services implemented several rule changes. Following are the list of rules from Title 25, Texas Administrative Code that were updated in 2024.

25 TAC 289.201-General Provisions for Radioactive Material

25TAC 289. 202 Standards for Protection Against Radiation from Radioactive Material

25TAC 289. 229 Radiation Safety Requirements for Accelerators, Therapeutic Radiation Machines, radiation Therapy Simulation Systems, and Electronic Brachytherapy Devices

25TAC289.252 Licensing of Radioactive Material

25TAC 289.256 Medical and Veterinary Use of Radioactive Material

25TAC289.301 Registration and Radiation Safety Requirements for Lasers and Intense-Pulsed Light Devices

The rule changes were reviewed and verified with our existing program manual for compliance.

Annual Radiological Safety Laboratory Reviews

In 2024, a total of 67 radiological safety laboratory reviews/inspections were performed on the TAMU main campus, Health Science Center and RELLIS including 2 neutron moisture gauge user permits. RSS also completed inspections of 17 remote site RAM locations, including 8 neutron moisture gauge user permits. Inspections for 44 RPD and 46 laser permits under R00304 and Z00116 were performed. These inspections were performed on a periodic basis when new units were added and /or decommissioned, respectively. These reviews were conducted in addition to other visits to the labs such as package delivery, waste pickup, contamination/radiation surveys, and upon request of the PI. Laboratories that required follow-up visits by RSS due to minor discrepancies were completed in a timely manner.

Review of Animal Use protocols/IRB protocols/ Compliance review

In 2024, about 48 animal use protocols were reviewed for the use of radioactive materials, radiation producing devices and lasers.

21 Institutional Review Board (IRB) human subject study protocols were reviewed and approved.
In addition, 50 radioactive material/radiation producing devices and laser compliance items from Maestro were reviewed and approved.

Radiological Safety Committee Audit

The Radiological Safety Committee performed three audits on our radiation safety program key areas. The following table furnishes details of the audit. Overall, there were no deficiencies identified in the topic areas that were audited.

Table 7- Summary of RSC Audits

Audit topic	Date	Performed by	Comments
Sealed Source Leak tests	January 17, 2024	Malcolm Delovio, Bryan Tomlin	The auditors were satisfied with the audit. No findings. Recommendations: Implementation of a data dashboard for daily workflow, tracking and data retrieval using the existing software to better streamline the process.
Organization and Program Scope	September 5, 2024	Bryan Tomlin	The auditor was satisfied with the audit. No findings Recommendations: TAMU EHS-RSS is a large operation that is currently well-organized and operating effectively. Going forward, the TAMU research community would benefit from a continued drive to lead in this area. Staff recruitment efforts should continue as needed and development of expertise within the current staff should be supported.
Waste Disposal Management Records	November 14, 2024	Thomas Welsh	The auditor was satisfied with the audit. No Findings Recommendation: Explore ways to further improve record retention and storage.

State Inspections -
Texas Department of State Health Services (TDSHS) Radiation control

Table 8 – Summary of 2024 State Inspections

License or Registration	Site Inspected	Date	Discrepancies or Violations
L00448	Site 043- Records Only	November 20, 2024	No violations
L05683	Site 019-Overton Site 018-Rellis Site 012-USB	September 16,2024 September 23, 2024 September 23, 2024	No violations
	Site 000 (Cyclotron Institute)	September 24, 2024	No violations
	Site 020-Harvey Mitchell Pkwy (records only site)	November 20, 2024	No violations
L06561	Site 000 (Cyclotron Institute)	September 24, 2024	No violations
R00304	Site 014-Kirbyville (remote inspection)	December 10, 2024	No violations

Note: Site 014 inspection under R00304 was a remote self-inspection conducted as part of the site 014 and equipment decommissioning.

Radiological Incidents/Events

In 2024, there were six incidents that were reported to radiological safety. The following is the summary of reported incidents.

Table 9- Summary of Radiological Incidents/Events

Location	Incident details	Comment
Veterinary Radiology (February 5, 2024)	Minor personnel hand exposure during radiograph - individual was not wearing lead gloves	Retraining was provided to the individual. Chief radiologist stressed the importance of State regulations and having protective devices while holding the animal. The estimated dose to extremity was only 4.3 mrem
Veterinary Large Animal Radiology (April 1, 2024)	While performing a fracture fixation and pastern arthrodesis under fluoroscopic guidance, unintended drift in the position of the fluoroscopic unit and miscommunication with the student assistant and radiologist resulted in accidental exposure of the student's digit during acquisition of an image.	Radiology tech has discussed the importance of avoiding exposure prior to this incident and discussed the process again with the student tech following this incident. The estimated extremity dose to the individual based on the time of exposure is about 56 mrem.
Veterinary Small Animal Radiology (November 12, 2024)	The vet tech was holding the kitten until the tube was ready. The student was supposed to take the radiograph only after he removed the hand but pressed the button too early.	Discussed the three-way communication system to make sure that everything is ready before taking the radiograph. Dose estimated to the extremity of individual was about 20 mrem.

Cyclotron Institute (At-211 contamination incident) (September 25, 2024)	Personnel contamination was noticed by the individual who handled the At-211 chemistry process	It turned out it was faulty detector, cable issues. No true contamination
Cyclotron Institute (At-211 contamination incident) (November 5, 2024)	Target removal was successful, however, there was a problem with dissolution chamber leading to personnel contamination. The dissolution chamber has a tube that attaches to the underside of the upper piece. The tube came loose during dissolution	Personnel were decontaminated and additional surveys were carried out in the area. No shipments were made. All materials were stored at the Cyclotron Institute.
Texas Veterinary Diagnostic Laboratory (TVMDL) (November 27, 2024)	TVMDL received biological samples for analysis. The radiation detector showed unusually higher counts and TVMDL called radiological safety for support. Upon further investigation, it was noted that tissue samples that they received were from a Sn-117m treated dog.	Contamination surveys were performed in the lab. Equipment used for the preliminary analysis of samples was decontaminated. Also facilitated shipping the samples back to the sender.

Report Submitted By: Latha Vasudevan, RSO Digitally signed by Latha Vasudevan, RSO Date: 2025.07.18 12:51:52 -05'00' Date: 7/18/25

Radiological Safety Officer
Latha Vasudevan, Ph.D., CHP

Reviewed By: Bryan Tomlin Date: 7/21/2025

Chair, Radiological Safety Committee
Bryan Tomlin, Ph.D.