RSNSA

Radiation Safety and Nuclear Security Authority

Protecting People and the Environment

Joint Convention
on the Safety of Spent Fuel Management and
on the Safety of Radioactive Waste Management

National Report for Mauritius for the Seventh Review Meeting of Contracting Parties

Radiation Safety and Nuclear Security Authority

Mauritius

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SECTION A: INTRODUCTION

Mauritius acceded to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (hereafter referred to as "Joint Convention") on 14 April 2013 and it formally entered into force for Mauritius on 14 July 2013. Since its accession to the Joint Convention, Mauritius participated in the fifth and sixth Review Meeting of the Joint Convention, in 2015 and in 2018, and submitted relevant national reports.

Mauritius is a small country with a population of approximately 1.3 million. The application of nuclear technology in the country has significantly increased in the past years. Radioactive materials are being used in Mauritius in various sectors, mostly in the medical, industrial, and the agricultural sectors. There is no nuclear facility or research reactor in the country.

Mauritius is not a major generator of radioactive waste. Most of the radioactive waste generated in the country are solid disused sealed sources from industrial applications, and liquid waste from nuclear medicine applications.

This national report is submitted for the purpose of the Seventh Review Meeting of the Joint Convention to describe the measures taken by Mauritius to meet its obligations under the Convention.

This third national report has been compiled by the Radiation Safety and Nuclear Security Authority (RSNSA), the national regulatory body for radiation safety and nuclear security in Mauritius, which is also the designated focal agency in the country for the Joint Convention. This report has been compiled in accordance to INFCIRC/604/Rev.3 "IAEA Guidelines Regarding the Form and Structure of National Reports", (2014).

Summary of the Main Developments during the Reporting Period

The main developments since the last national report include:

- Promulgation of a new comprehensive legislation on radiation safety and nuclear security in March 2019.
- Political commitment to implement the Guidance on the Management of Disused Radioactive Sources and act in accordance with the Guidance in January 2020.

SECTION B: POLICIES AND PRACTICES

Spent Fuel Management Policy and Practices

Mauritius has no nuclear reactor and no nuclear fuel processing facility that could lead to the generation or disposal of spent fuel. In this respect, spent fuel management policy and practices are not relevant for the country.

Radioactive Waste Management Policy

Mauritius has a draft policy on Management of Radioactive Waste and Disused Sealed Sources. The draft policy is in full compliance with the Joint Convention and the latest IAEA safety standards. Radiation Safety and Nuclear Security Act 2018 also makes adequate provisions for the management for the management of radioactive waste and disused sealed sources in line with the draft policy.

The management of radioactive waste in Mauritius is regulated within the framework of the Radiation Safety and Nuclear Security Act 2018. A set of regulations, to be cited as the *Radiation Safety and Nuclear Security (Management of Radioactive Waste and Disused Sealed Sources) Regulations* have been developed to complement the provisions of the Act for the sound management of all radioactive waste generated in the country. The regulations are currently being reviewed and finalised in consultation with all relevant stakeholders.

In line with the provisions of the Joint Convention, Mauritius recognises the responsibility to fundamentally manage its own waste. However, Mauritius being a country with small amount of radioactive waste and small land area, regional options are being explored for the disposal of its radioactive waste. Therefore, the exportation of radioactive waste is not precluded. However, the importation of radioactive waste generated outside Mauritius is prohibited under section 27(3) of the Act.

Pursuant to Section 33(2) of the Act, any person importing a Category 1 or 2 source is required by the Radiation Safety and Nuclear Security Authority (RSNSA) to make contractual and financial arrangements for the return of the sealed source to its supplier abroad when it shall no longer be used for its intended purpose. This is one of the requirements of the regulatory body for the issue of an import permit authorising the importation of Category 1 and 2 radioactive sources. As regard to any disused sealed source which cannot be returned to its supplier, the owner has the obligation to transfer the source to a radioactive waste management facility.

In January 2020, the Government of Mauritius has expressed its commitment to the IAEA Supplementary Guidance to the Code of Conduct for the Safety and Security of Radioactive Sources on the Management of Disused Radioactive Sources.

Radioactive Waste Management Practices

Wastes with short half-lives radionuclides are managed at the licensee's facility. Basically, such waste is allowed to decay until their radioactivity levels decrease below the levels of release from regulatory control and then are disposed as normal waste.

The RSNSA has collected and conditioned some legacy disused sealed sources, which could not be returned to their suppliers overseas, for long-term storage at the Centralised Radiological Source Storage Facility which will be shortly operational.

Criteria used to define and categorise radioactive waste

Radioactive waste, as defined in Act, means material, in whatever physical forms, remaining from practices or interventions and for which no further use is foreseen, and that contains or is contaminated with radioactive material and has an activity or activity concentration higher than the level set for clearance from regulatory requirements

Mauritius has adopted the international classification system, which features six classes: exempt, very short lived, very low level, low level, intermediate level and high level.

Most of the wastes generated in Mauritius contain radionuclides with short radioactive half-lives. This falls into the class of very short-lived waste, which after a short period of time for decay can be cleared and becomes exempt waste requiring no further consideration from a radiation safety perspective. Other wastes, mainly disused radioactive sealed sources, fall into the category of low-level waste, with a few legacy radium sources being intermediate level waste. There is no high-level radioactive waste in the country.

SECTION C: SCOPE OF APPLICATION

The Convention not apply to the safety of spent fuel management as there is no nuclear facility or research reactor in Mauritius.

Mauritius has also not declared waste that contains only naturally occurring radioactive material as radioactive waste for the purpose of this Convention.

Mauritius has no military or defence programmes that produce radioactive waste.

The convention shall apply for the management of radioactive waste and disused sealed sources.

SECTION D: INVENTORY AND LISTS

Most of the disused sources which could not be returned to their overseas suppliers are currently being stored at the licensee's facility in optimum safety and security conditions, under the control of the RSNSA. These disused sealed sources will eventually be transferred to the CRSSF once the facility will be operational.

The RSNSA does maintain a national inventory of radioactive waste in the country, including the disused sealed radioactive sources

The inventory of radioactive waste is at *Annex I.*

SECTION E: LEGISLATIVE AND REGULATORY SYSTEM

The Radiation Safety and Nuclear Security Act

The Radiation Safety and Nuclear Security Act 2018, which came into force on 19 March 2019, constitutes the legal basis for regulating the use of ionising radiation in the country, including the management of radioactive waste. The objective of the Act is to effectively regulate and control all radiation sources and practices for the adequate protection of people and the environment, both now and in the future, against the harmful effects of ionising radiation, for the safety of practices and the security of radioactive sources.

The RSNS Act is a comprehensive legislation which covers safety, security and safeguards. Adequate provisions are made in the Act for the protection of people and the environment from the harmful effects of ionising radiation. The Act also gives force in law to the various conventions and treaties ratified by Mauritius in the field on radiation safety and nuclear security, including the Joint Convention.

The RSNS Act has repealed and replaced the Radiation Protection Act 2003. The new legislation sets out the safety principles for protecting people and the environment against the harmful effects of radiation. The RSNS Act provides for the establishment of the RSNSA as an effectively independent regulatory body with adequate powers. The RSNSA took over the activities of the Radiation Protection Authority, the former regulatory body established under the Radiation Protection Act 2003.

The RSNS Act does make adequate provisions for the management of radioactive waste.

As per Section 32(3) of the Act, no person shall dispose of any radioactive waste or disused sealed source unless he holds an authorisation from the Authority. Section 27(3) of the Act prohibits the importation of any radioactive waste generated outside Mauritius shall be prohibited.

The Regulatory Body

The Radiation Safety and Nuclear Security Authority (RSNSA) was established in March 2019, upon the proclamation of the Radiation Safety and Nuclear Security Act 2018, as an effectively independent regulatory body. The RSNSA is a Government Department operating under the aegis of the Ministry of Energy and Public Utilities.

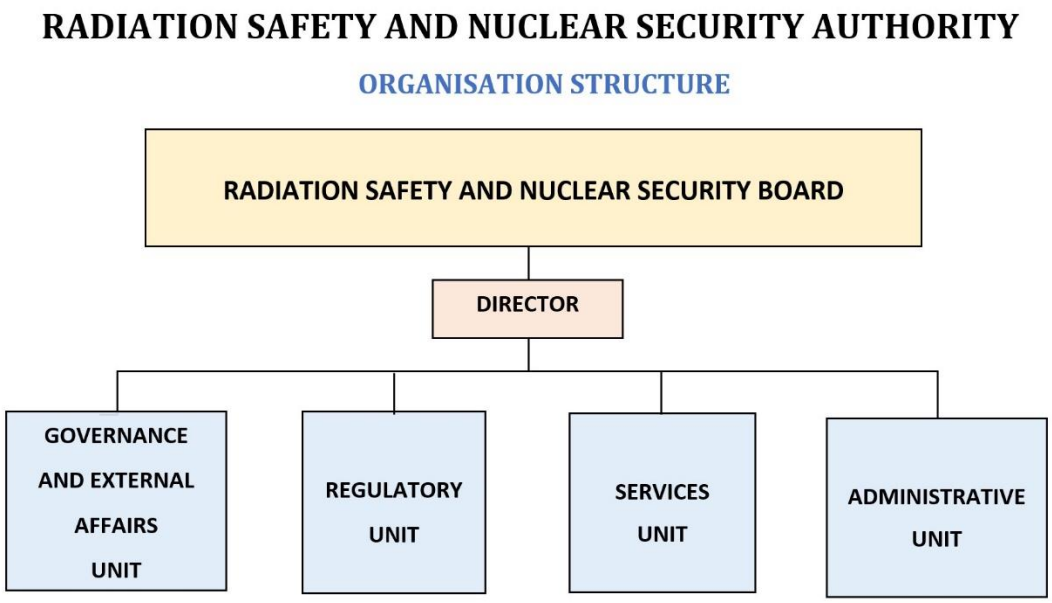
The main objectives of the Authority are to:-

(a) regulate all practices involving the use of ionising radiation;
(b) create the conditions for the promotion of radiation safety and nuclear security culture;
(c) assist in fulfilling the obligations of Mauritius with regard to relevant international instruments ratified by it;
(d) provide radiation protection services; and
(e) promote education, training, research and development in the radiation safety and nuclear security.

The RSNSA is administered and managed by the Radiation Safety and Nuclear Security Board (RSNSB) which comprises of a Chairperson, and eight members from other Ministries and relevant organisations. The Director is the head of the Authority and is responsible to the Board for the control and management of the day-to-day business of the Authority.

The Board shall ensure that adequate human and financial resources are provided for the RSNSA to effectively carry out all its functions as stipulated under the RSNS Act.

The diagram below illustrates the organisational structure of the RSNSA.



The Technical Section of the RSNSA comprises three units, namely the **Governance and External Affairs Unit**, **Regulatory Unit** and the **Services Unit**. The Governance and External Affairs Unit is responsible for the development of policies and guides to facilitate the implementation of radiation safety and nuclear security at user facilities. The Regulatory Unit provides regulatory services to control all practices involving the use of ionising radiation. Licensing of radiation practices and inspection are the two main activities of the Regulatory Unit. On the other hand, the Services Unit provides essential radiation protection services such as Personal Radiation Monitoring Service and Radioactivity Analysis Service. The **Administrative Unit** provides administrative support to the Director and the Technical Units of the Authority for the smooth running of the organisation.

The RSNSA is registered to MS ISO 9001:2015 which gives complete assurance that the organisation operates to the highest quality standards with an effective quality management system.

Radiation Safety and Nuclear Security (Management of Radioactive Waste and Disused Sealed Sources) Regulations

A set of draft regulations on radioactive waste management and disused sealed sources has been developed to complement the provisions made in the Radiation Safety and Nuclear Security Act 2018.

These draft regulations provide for the following:

(a) Safe Management of Radioactive Waste and Disused Sealed Sources;
(b) Discharge and clearance of Radioactive Material;
(c) Location, design, construction and commissioning, operation and decommissioning of Radioactive Waste Management Facilities; and
(d) Physical protection and security of Radioactive Waste Management Facilities.

These regulations are currently being reviewed and finalised in consultation with the relevant stakeholders.

SECTION F: OTHER GENERAL SAFETY PROVISIONS

Article 21: Responsibilities of the Licence Holder

The main provisions, describing duties and responsibilities of the licence holder for the management of radioactive waste, are established in the draft Radiation Safety and Nuclear Security (Management of Radioactive Waste and Disused Sealed Sources) Regulations. These regulations assign the prime responsibility for the safe management of all radioactive waste and disused sealed sources at a facility to the licensee.

Additionally, these regulations provide for the licensee to -

(a) ensure that that any radioactive waste generated is kept to the minimum practicable in terms of both activity and volume.

(b) develop and implement a strategy for the safe management of all radioactive waste and disused sealed sources at his facility.

(c) have appropriate arrangements in place for the safe and secure storage of any disused sealed source or radioactive waste that may be generated within his facility.

(d) have appropriate arrangements in place for the storage of any disused sealed source or radioactive waste that may be generated within his facility.

(e) ensure the protection of workers, members of the public and the environment;

(f) maintain an inventory of all radioactive waste that is generated, stored, transferred or disposed and

(g) enables the subsequent inspection, monitoring, retrieval and preservation of the radioactive waste or disused sealed source in conditions suitable for its future safe management.

Article 22: Human and Financial Resources

The draft set of regulations, Radiation Safety and Nuclear Security (Management of Radioactive Waste and Disused Sealed Sources) Regulations do provide for the licensee to ensure that all operations within a radioactive waste management facility be carried out by trained, qualified and competent personnel.

Owners of facilities where radioactive waste are generated or present will be required as a condition of authorisation to provide for the safe management of radioactive waste and control of effluent discharges. Owners will be required to cover the associated costs and to provide funding for the management of waste up to its disposal or clearance from control and to provide for decommissioning of facilities.

Article 23: Quality Assurance

The requirements of the draft regulations with regard to quality assurance are as follows:

(a) Any person applying for a licence shall submit a safety assessment report and any other relevant information as may be required by the Authority to demonstrate the safe management of all radioactive waste and disused sealed sources at his facility. The safety assessment report shall -

- include a description of how all the safety aspects of the site, the design, operation, shutdown and decommissioning of the facility and the managerial controls satisfy the regulatory requirements;
- demonstrate the level of protection provided and provide assurance to the Authority that all regulatory requirements will be met;
- include considerations for reducing hazards posed to workers, members of the public and the environment during normal operation and in possible accident;

(b) A licensee shall review and update the safety assessment report for his facility in accordance with the conditions of his licence and shall submit the updated report as and when required by the Authority.

(c) The licensee shall develop and maintain a suitable and comprehensive recording system that provides for -

- an up-to-date inventory of all radioactive wastes and disused sealed sources, including their relevant characteristics;
- full traceability of all radioactive waste and disused sealed sources;
- information on any discharge;
- information on material which has been subject to clearance;
- the results of the radiation monitoring programme;

(d) The licensee shall ensure that all records are made available to the Authority as may be required.

(e) The licensee shall retain all records for at least 10 years, or any other period of time as may be determined by the Authority.

Article 24: Operational Radiation Protection

Any radioactive waste or disused sealed source shall be stored in a manner that ensures proper segregation, and protection of the workers, the public and the environment, and enables its subsequent inspection, monitoring, retrieval and preservation in a condition suitable for its future safe management.

The regulations will also require a licensee to ensure that doses to workers and members of the public are below the dose limits set out in First Schedule of the Radiation Safety and Nuclear Security Act 2018, and are kept as low as reasonably practicable. The dose limits are in line with the latest IAEA Safety Standards.

Clearance of any material containing radioactive substances shall be subject to the applicable clearance levels. The licensee shall monitor and record any clearance with sufficient details and accuracy to demonstrate compliance with the clearance levels.

The discharge of radioactive material is subject to the applicable discharge limits set out in the Radiation Safety and Nuclear Security (Management of Radioactive Waste and Disused Sealed Sources) Regulations. The licensee shall keep any discharge as far as below the applicable discharge limits as is reasonably achievable and monitor and record any discharge with sufficient detail and accuracy to demonstrate compliance with the applicable discharge limits.

Article 25: Emergency Preparedness

A licensee authorised to manage radioactive waste and disused sealed sources shall have an emergency response plan. A National Radiological Emergency Preparedness and Response Plan (NREPRP) is currently under development. It will also caters all foreseeable incidents from the management of radioactive waste.

Article 26: Decommissioning

The requirements for the decommissioning of a radioactive waste management facility are as follows:-

(a) A radioactive waste management facility shall not be decommissioned unless approved by the Authority.

(b) Prior to the decommissioning of a radioactive waste management facility, the licensee shall have a decommissioning plan, including a safety assessment of all related operations.

SECTION G: SAFETY OF SPENT FUEL MANAGEMENT

This section is not relevant to Mauritius as there is no nuclear facility or nuclear research reactor in Mauritius.

SECTION H: SAFETY OF RADIOACTIVE WASTE MANAGEMENT

As per Section 32(2) of the Radiation Safety and Nuclear Security Act, 2018, any licensee authorised to manage radioactive waste or disused sealed sources shall be responsible for the safety and security of such radioactive waste or disused sealed sources. The licensee shall also ensure that the generation of radioactive waste is kept to the minimum practicable in terms of volume and activity.

Article 14: Design and Construction of Facilities

(i) A radioactive waste management facility shall be located, designed and constructed as described in its safety assessment so as to ensure safety for its expected operating lifetime under both normal and possible accident conditions, and for its decommissioning.

(ii) A licensee shall ensure the proper commissioning of a radioactive waste management facility prior to its full operation and shall submit a commissioning report to the Authority.

(iii) A licensee shall, during the commissioning of a radioactive waste management facility, verify that the equipment, structures, systems and components, and the facility as a whole, meet the performance criteria described in the safety assessment report.

Article 16: Operation of Facilities

A licensee authorised to operate a radioactive waste management facility shall –

(i) have a comprehensive management system in place for the safe operation of the facility;

(ii) ensure that doses to workers and members of the public are below the dose limits set out in First Schedule of the Radiation Protection (Management of Radioactive Waste and Disused Sealed Sources) Regulations, and are kept as low as reasonably practicable;

(iii) ensure that all operations within the facility are carried out by trained, qualified and competent personnel, and are in accordance with the operational limits, conditions and controls as described in the safety assessment report.

Disposal of radioactive waste is not envisaged in Mauritius. However the construction of a Centralised Radiological Source Storage Facility (CRSSF) has been initiated for the long term storage of all legacy disused radioactive sources. The facility will be managed and operated by the RSNSA Services Unit.

SECTION I: TRANSBOUNDARY MOUVEMENT

Mauritius is an island in the Indian Ocean and is surrounded by the sea. Due to the specificity of the country, the only means of any radioactive source entering the country is by sea or air. The RSNSA in collaboration with the Customs Department of the Mauritius Revenue Authority exercise rigorous control over any radioactive material entering the country. Import and Export permits are required prior to the shipment or release of any radioactive material.

Packaging and transportation of radioactive material is governed by the Radiation Safety and Nuclear Security (Safe Transport of Radioactive Material) Regulations. These regulations make provisions for the RSNSA to effectively regulate the transport of radioactive material. These regulations have domesticated the Regulations on Safe Transport of Radioactive Material (2018 Edition) No. SSR-6 (Rev. 1) made by the International Atomic Energy Agency.

Mauritius does not import any radioactive waste and is a non-producer of radioactive material. The only transboundary movements involving Mauritius are thus shipment of disused radioactive sources, normally sent to their State of origin for their final disposal.

SECTION J: DISUSED SEALED SOURCES

Most disused sealed sources are currently being stored at the user premises. No person shall dispose of any radioactive material, including radioactive waste and disused sealed sources, unless he holds an authorization from the Authority.

The processing or manipulations of the disused sources or their housing, containers or packaging are not envisaged within a facility.

In the process of consolidating the National Register of Radiation Sources, the RSNSA came across a number of disused radioactive sealed sources which are presently being stored at the users' facilities. Due to lack of adequate infrastructures, many of these radioactive sources are not being stored in optimum safety and security conditions.

To improve this situation, the RSNSA decided to collect and store all the disused radioactive sealed sources, which cannot be returned to their suppliers abroad, in a centralised radiological storage facility for long term storage.

The construction of the CRSSF is in progress. A Safety Case for the CRSSF, has been developed with the assistance of the International Atomic Energy Agency (IAEA) which provides a description of the site, the storage facility and the disused sealed radioactive sources to be stored at the facility. The project is being fully funded by the US Department of Energy. The construction of the CRSSF is nearing completion and it is expected that the facility will be operational by January 2021.

SECTION K: PLANNED ACTIVITIES TO IMPROVE SAFETY

For the purpose of improving the safe management of radioactive waste and disused sealed sources, Mauritius has planned for

- Strengthening the Regulatory Infrastructure with the development of regulations and guidelines and international cooperation.
- Finalisation and Promulgation of a new set of regulations on management of radioactive waste and disused sealed sources.
- Finalisation and Adoption of the National Policy on Management of Radioactive Waste and Disused Sealed Sources.
- Operationalisation of the Centralised Radiological Source Storage Facility for the safe and secure storage of disused sealed radioactive sources.

SECTION L: CONCLUSIONS

The Government of Mauritius, mostly through the RSNSA, has made significant efforts to meet all its obligations under the Joint Convention.

The Radiation Safety and Nuclear Security Act 2018 is a comprehensive legislation which covers radiation safety, nuclear security and safeguards and makes better provisions for the management of radioactive waste and disused sealed sources.

The Act established the Radiation Safety and Nuclear Security Authority as an effectively independent regulatory body with adequate powers to effectively carry out all its functions.

The Act also makes provision for adequate human and financial resources to be provided for ensuring safety of management of radioactive waste and disused sealed sources.

Necessary regulations are being made to complement the provisions of the RSNS Act to provide adequate protection of human health and the environment against the harmful effects of radiation hazards.

ANNEX I: INVENTORY OF DISUSED SEALED SOURCES

Disused Sealed Sources in Mauritius

	Description of Source	Activity	Date	Quantity	Storage Location
1.	Strontium-90 (surface applicator)	Unknown	Unknown	4	Radiotherapy Department, Victoria Hospital
2.	Cobalt-60 (calibration source)	1 µCi	1-Mar-68	1	
3.	Iodine-131 (reference source)	10 µCi	Unknown	1	
4.	Iodine-131	Unknown	Unknown	8	
5.	Marinelli Beaker – Mixed radionuclides	40.83 kBq	25-Nov-94	1	
6.	Caesium-137 (calibration source)	0.1 mCi	30-Jun-75	1	
7.	Caesium-137 (source CDC 302)	2 mCi	1969	1	
8.	Caesium-137 (source CDR 123)	1 µCi	1-Mar-68	1	
9.	Caesium-137	Unknown	Unknown	8	
10.	Strontium-90 (Irradiator for TLD)	1 mCi	1-Nov-92	1	
11.	Strontium-90 (Opthalmic Applicators)	Unknown	Unknown	4	
12.	Cobalt-60 (Calibration Source)	Unknown	Unknown	8	
13.	Cobalt-60 (Calibration Source)	1 µCi	1-Mar-68	1	
14.	Carbon-14 (calibration source)	120 µCi	1-Nov-93	2	
15.	Radium-226 capsules	1.27 Ci	Unknown	5	Radioactive Waste Storage Facility, Jawaharlal Nehru Hospital
16.	Iodine-129 calibration source)	Unknown	Unknown	2	
17.	Caesium-137 tubes	97 mCi	12-Nov-96	20	
18.	Caesium-137 tubes	260 mCi	18-Mar-94	5	
19.	Caesium-137 tubes	92	21-Mar-94	2	
20.	Caesium-137 tubes	286 mCi	22-Mar-94	3	
21.	Caesium-137 tubes	10 Ci	Unknown	29	

	Description of Source		Activity	Date	Quantity	Storage Location
22.	Americium-241 (Smoke Detectors)		0.9 µCi	Unknown	350	Nuclear Medicine Department, Jawaharlal Nehru Hospital
23.	Cobalt-57		10 mCi	5-Jan-01	1	
24.	Cobalt-57		200 µCi	1-Oct-02	1	
25.	Americium-241 (Smoke Detectors)		80 µCi	1995	300	Mauritius Sugar Terminal Corporation
26.	Americium-241 (Smoke Detectors)		7 µCi	Unknown	300	New Government Centre
27.	Radium-226 (Educational Source)		120 µCi	14-Sep-78	24	Radiation Safety and Nuclear Security Authority
28.	Cobalt-60 (Educational Source)		140 µCi	Unknown	29	Radiation Safety and Nuclear Security Authority
29.	Strontium-90 (Educational Source)		140 µCi	Unknown	28	Radiation Safety and Nuclear Security Authority
30.	Thorium (Educational Source)		Unknown	Unknown	1	Radiation Safety and Nuclear Security Authority
31.	Americium-241 (Educational Source)		125 µCi	Unknown	26	Radiation Safety and Nuclear Security Authority
32.	Ceasium-137 (Educational Source)		5 µCi	Unknown	1	Radiation Safety and Nuclear Security Authority
33.	Nickel-63 (Explosive and Drug Detection)		10	Unknown	1	ADSU Office, Airport
34.	Nickel-63 (Gas Chromatography)		10	Unknown	1	Food Technology Laboratory
35.	Americium-241:Beryllium (Portable Nuclear Gauge)		50 mCi	Unknown	3	Mauritius Sugar Industry Research Institute - Irrigation Department
36	Americium-241:Beryllium	Portable Nuclear Gauge	40 mCi	Unknown	1	
	Caesium-137		7.6 mCi	Unknown		
37.	Americium-241:Beryllium		50 mCi	5-Nov-90	1	
	Caesium-137		10 mCi	5-Nov-90		
38.	Cobalt-60 – Educational Source		5 µCi	1-Jan-68	1	University of Mauritius - Physics Laboratory
39.	Americium-241:Beryllium	Portable Nuclear Gauge	8 mCi	14-Jan-10	1	Sotravic Ltd.
	Caesium-137		40 mCi	14-Oct-10		
40.	Americium-241:Beryllium	Portable Nuclear Gauge	8 mCi	Unknown	1	Phil Alain Didier Company Ltd.
	Caesium-137		40 mCi	Unknown		
41.	Caesium-137 (Irradiator)		2.9 kCi	1-Jan-76	1	Entomology Division
42.	Californium-252 (Explosives and Drugs Detection)		3.2 kCi	Unknown	1	Police Department, VIPSU

	Description of Source		Activity	Date	Quantity	Storage Location
43.	Carbon-14		99 µCi	Sep 2000	1	National Environmental Laboratory
44.	Carbon-14		Unknown	Unknown	1	
45.	Nickel-63 (Gas Chromatography)		10	Unknown	1	
46.	Americium-241:Beryllium	Portable Nuclear Gauge	8 mCi	22-Feb-04	1	Labolink Ltd.
	Caesium-137		40 mCi	22-Feb-04		
47.	Americium-241:Beryllium	Portable Nuclear Gauge	8 mCi	19-Jan-93	1	Rehm Grinaker Construction Company Limited
	Caesium-137		40 mCi	15-Apr-93		
46.	Americium-241:Beryllium	Portable Nuclear Gauge	8 mCi	22-Sep-05	1	
	Caesium-137		40 mCi	07-Dec-05		