



# **Country Waste Profile Report for CUBA Reporting Year: 2010**

*For guidance on reading Country Waste Profile Reports,  
please refer to the following internet based document:*

*<http://www-newmdb.iaea.org/help/profiles9/guide.pdf>*

*For further information, please contact the Responsible Officer via e-mail:  
[NEWMDB@IAEA.org](mailto:NEWMDB@IAEA.org)*

## Waste Classification Schemes

Country: CUBA

Reporting Year: 2010

Waste Class Matrix: **IAEA Def.**

This country does use the IAEA Scheme: Yes

Description: The Agency's standard matrix

Waste Class Name	Distribution %			
	VLLW	LLW	ILW	HLW
VLLW	100.0	0.0	0.0	0.0
LLW	0.0	100.0	0.0	0.0
ILW	0.0	0.0	100.0	0.0
HLW	0.0	0.0	0.0	100.0

Comment **# 171: Waste Classification Scheme**

The waste classification scheme defined in Cuban National Regulation (Regulation for the Safe Management of Radioactive Waste, Res 35/2003) is similar to the IAEA Def matrix. But there is not high level waste in Cuba.

Waste Class Matrix: **Waste Cuba**

Yes

Description: Waste Class Matrix according to the new IAEA Classification of Radioactive Waste

Waste Class Name	Distribution %			
	VLLW	LLW	ILW	HLW
LILW-SL	76.0	24.0	0.0	0.0
LILW-LL	0.0	100.0	0.0	0.0

Attachment **#2041: Waste Matrix**

Waste Class matrix.pdf

El fichero describe los elementos considerados para definir la matriz

**Definition of «unprocessed waste» and «processed waste»:**

This country uses the following definitions:

	as-generated waste	processed for handling	processed for storage	processed for disposal
Unprocessed means:	x			
Processed means:		x	x	x

## Groups Overview

Country: CUBA

Reporting Year: 2010

<b>Reporting Group:</b>	<b>CPHR</b>
Inventory Reporting Date:	December 2010
Waste Matrix Used:	Waste Cuba
Description:	Center for Radiation Protection and Hygiene

Site Name	Facility Name	Facilities Defined		
Repository	Repository			disposal
RWMF	WPF	processing		
	WSF		storage	

Comment **# 180: Reporting group**

The Center for Radiation Protection and Hygiene (CPHR) is the institution responsible for radioactive waste management in Cuba

## Site (Structure) : Repository

Country: CUBA

Reporting Year: 2010

Full Name: Repository for final disposal of radioactive waste

Description:

Official Website:

License Holder(s):

Comment # 230: Repository

The repository was planned for the final disposal of low and intermediate level radioactive wastes from Juragua Nuclear Power Plant and nuclear applications. The construction of the NPP was stopped, as well as the studies regarding this repository.

Waste management facilities that are located at this site:

<b>Facility:</b>	<b>Repository</b>		
<b>Description:</b>	Repository for final disposal of radioactive wastes		
<b>Disposal part of facility                      Repository</b>			
The following shows disposal status for waste classes and SRS.			
<b>Waste Class</b>	<b>Actual</b>	<b>Planned</b>	
LILW-SL	No	No	
LILW-LL	No	No	
<b>List SRS?</b>	No		
<b>List UMMT?</b>	No		
<b>Type:</b>	engineered near surface		
<b>Facility is modular?</b>	Yes		
<b>Capacity existing (m3):</b>	0	<b>Capacity planned (m3):</b>	12300
<b>Depth (m):</b>	15	<b>Host medium:</b>	crystalline rock (granite)
<b>Phase Name</b>	<b>Start Year</b>	<b>End Year</b>	<b>Estimate</b>
planning and/or concept assessment	1990	1994	False
site selection	1994	1997	False

**Site (Data) : Repository**

Stock of waste as at December 2010

Country: CUBA

Reporting Year: 2010

**Site Name: Repository**

Full Name: Repository for final disposal of radioactive waste

Inventory Reporting Date: December 2010 Waste Matrix Used: Waste Cuba

Comment **# 230: Repository**

The repository was planned for the final disposal of low and intermediate level radioactive wastes from Juragua Nuclear Power Plant and nuclear applications. The construction of the NPP was stopped, as well as the studies regarding this repository.

## Site (Structure) : RWMF

Country: CUBA

Reporting Year: 2010

Full Name: Radioactive Waste Management Facility

Description:

Official Website:

License Holder(s): Center for Radiation Protection and Hygiene, Calle 20 No. 4113 Playa C. Habana

Comment # 181: RWMF

Radioactive Waste Management Facility belongs to the Center for Radiation Protection and Hygiene, which is the License Holder

Waste management facilities that are located at this site:

<b>Facility:</b>	<b>WPF</b>	
<b>Description:</b>	Waste Processing Facility, includes compaction of solid waste, immobilization by cementation of liquid waste and non compactible solids and conditioning of spent sealed sources.	
<b>Processing part of facility WPF</b>		
The following shows processing status for waste classes and SRS.		
<b>Waste Class</b>	<b>Actual</b>	<b>Planned</b>
LILW-SL	No	No
LILW-LL	No	No
<b>Type:</b>	Treatment, Conditioning	
<b>Year opened:</b>	1999	

## Site (Structure) : RWMF

Country: CUBA

Reporting Year: 2010

<b>Facility:</b>	<b>WSF</b>					
<b>Description:</b>	Waste storage facility, includes conditioning and non conditioning radioactive waste storage in an above ground construction. Disused sealed sources are also stored in this facility.					
<b>Storage part of facility</b>		<b>WSF</b>				
The following shows storage status for waste classes and SRS.						
<b>Waste Class</b>	<b>Actual</b>	<b>Planned</b>				
LILW-SL	Yes	Yes				
LILW-LL	Yes	Yes				
<b>List SRS?</b>	Yes					
<b>List UMMT?</b>	No					
<b>Capacity:</b>	Sufficient capacity for at least 10 years is available.					
<b>Types of Storage Units</b>						
<b>Storage Unit Name</b>	<b>Type Name</b>	<b>Year Opened</b>	<b>Closed?</b>	<b>Full?</b>	<b>Modular?</b>	<b>Contains SRS?</b>
RW Storage	silo	1990	No	No	No	Yes
<b>Comment</b>	<b># 7242: Storage facility</b>					
The Storage facility contains conditioning and non conditioning radioactive waste and disused sealed sources.						

## Site (Data) : RWMF

Stock of waste as at December 2010

Country: CUBA

Reporting Year: 2010

**Site Name:** RWMF

Full Name: Radioactive Waste Management Facility

Inventory Reporting Date: December 2010

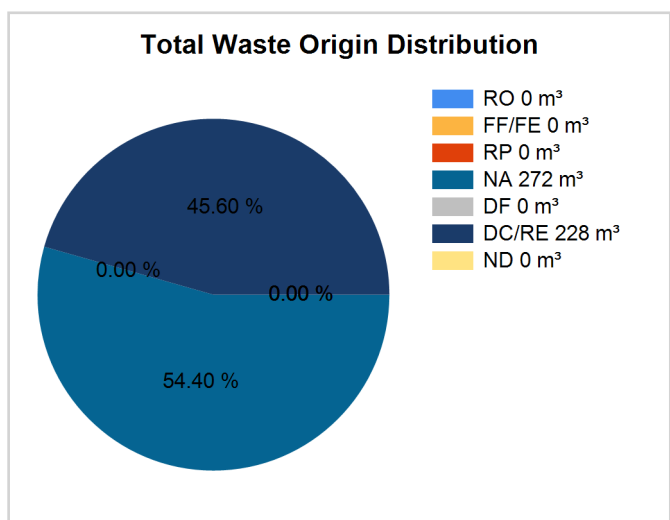
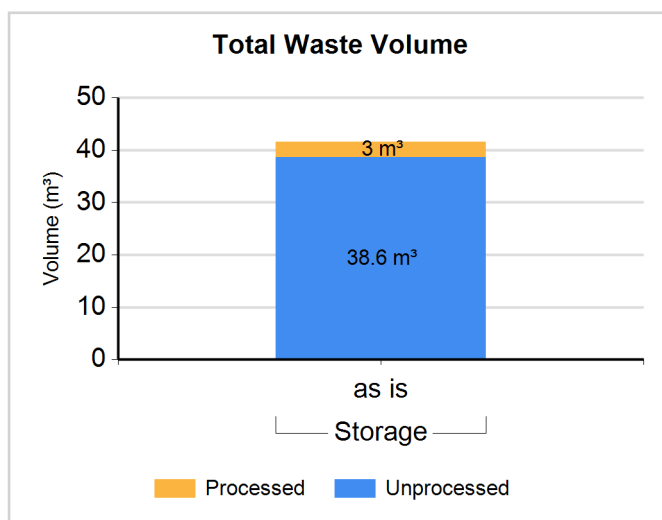
Waste Matrix Used: Waste Cuba

Comment # 181: RWMF

Radioactive Waste Management Facility belongs to the Center for Radiation Protection and Hygiene, which is the License Holder

**Waste Inventory**

Est=distribution is an estimate, Proc.=Is the waste processed (Yes/No)? RO=Reactor Operations, FF/FE=Fuel Fabrication/Fuel Enrichment, RP=Reprocessing, NA=Nuclear Applications,DF=Defence, DC/RE=Decommissioning/Remediation, ND=Not Determined



Note: where volume "as dispo" is provided, volume "as is" is used in the graph instead.

**Waste Class: LILW-SL**

Waste Class Name	Location / Facility	Proc	Est.	Volume "as is" (m³)	Volume "as dispo" (m³)	RO %	FF/FE %	RP %	NA %	DF %	DC/RE %	ND %
LILW-SL (liquid)	Storage	N	N	2.980	2.980	0.00	0.00	0.00	100.00	0.00	0.00	0.00
LILW-SL (solid)	Storage	N	N	29.920	29.920	0.00	0.00	0.00	23.00	0.00	77.00	0.00
LILW-SL (solid)	Storage	Y	N	2.800	2.800	0.00	0.00	0.00	100.00	0.00	0.00	0.00

**Waste Class: LILW-LL**

Waste Class Name	Location / Facility	Proc	Est.	Volume "as is" (m³)	Volume "as dispo" (m³)	RO %	FF/FE %	RP %	NA %	DF %	DC/RE %	ND %
LILW-LL (solid)	Storage	N	N	5.700	5.700	0.00	0.00	0.00	49.00	0.00	51.00	0.00
LILW-LL (solid)	Storage	Y	N	0.200	0.200	0.00	0.00	0.00	0.00	0.00	100.00	0.00

**Processing - Treatment method(s)**

Method	Status			
	Planned	R&D program	Current practice method use over the last 5 years	Past Practice
Compaction	N	N	Decrease	N



## Site (Data) : RWMF

Stock of waste as at December 2010

Country: CUBA

Reporting Year: 2010

## Processing - Conditioning method(s)

Method	Status			
	Planned	R&D program	Current practice method use over the last 5 years	Past Practice
Cementation	Y	N		N
Containerization	N	N	Same	N

## Spent Sources &lt;=30 years in Storage

Nuclide	Number of Sources/Total Activity of Sources (GBq)			c o n d	u n c o n d	c a t	Total Activity for all Groups (GBq)	Decay Date
	Group I less than or equal 4GBq	Group II more than 4GBq but less than or equal 4E+4GBq	Group III more than 4E+4GBq					
	num/activity	num/activity	num/activity					
Ba-133	6			Y	N	Y	1.520E-002	
	1.520E-002							
Ba-133	1			N	Y	Y	1.000E-008	
	1.000E-008							
Cf-252	6			N	Y	Y	6.000E-001	
	6.000E-001							
Co-60			5	Y	N	Y	1.250E+006	
			1.250E+006					
Co-60			33	N	Y	Y	5.280E+006	
			5.280E+006					
Co-60		42		N	Y	Y	2.330E+005	
		2.330E+005						
Co-60	6	5		Y	N	Y	5.801E+002	
	2.010E+001	5.600E+002						
Co-60		4		N	Y	Y	3.030E+002	
		3.030E+002						
Co-60	75	17		Y	N	Y	3.890E+002	
	1.530E+002	2.360E+002						
Co-60	22	5		N	Y	Y	7.610E+001	
	3.790E+001	3.820E+001						

## Site (Data) : RWMF

Stock of waste as at December 2010

Country: CUBA

Reporting Year: 2010

Co-60	190			Y	N	Y	8.260E+000	
	8.260E+000							
Co-60	222			N	Y	Y	9.270E-001	
	9.270E-001							
Cs-137		5		Y	N	Y	5.600E+004	
		5.600E+004						
Cs-137		97		Y	N	Y	2.160E+004	
		2.160E+004						
Cs-137		19		N	Y	Y	3.300E+003	
		3.300E+003						
Cs-137	4	368		Y	N	Y	4.642E+004	
	1.500E+001	4.640E+004						
Cs-137	136	83		Y	N	Y	1.506E+003	
	2.260E+002	1.280E+003						
Cs-137	15	8		N	Y	Y	1.852E+002	
	1.820E+001	1.670E+002						
Cs-137	198			Y	N	Y	2.120E+001	
	2.120E+001							
Cs-137	1	10		N	Y	Y	1.440E+003	
	3.700E-002	1.440E+003						
Cs-137	149			N	Y	Y	3.150E+000	
	3.150E+000							
Eu-152	2			N	Y	Y	8.800E-004	
	8.800E-004							
Eu-152	1			Y	N	Y	4.300E-006	
	4.300E-006							
Eu-154	2			Y	N	Y	2.100E+000	
	2.100E+000							
Eu-154	1			N	Y	Y	2.000E-004	
	2.000E-004							

## Site (Data) : RWMF

Stock of waste as at December 2010

Country: CUBA

Reporting Year: 2010

Eu-155	1			N	Y	Y	1.850E-004	
	1.850E-004							
H-3	18			Y	N	Y	5.000E+001	
	5.000E+001							
H-3	78			N	Y	Y	1.360E-002	
	1.360E-002							
Hg-203	2			Y	N	Y	1.500E-003	
	1.500E-003							
Hg-203	2			N	Y	Y	3.000E-011	
	3.000E-011							
Kr-85	2			Y	N	Y	4.600E+000	
	4.600E+000							
Kr-85	1	1		N	Y	Y	1.700E+001	
	2.000E+000	1.500E+001						
Kr-85	17			Y	N	Y	3.300E-003	
	3.300E-003							
Kr-85	2204			N	Y	Y	1.720E+000	
	1.720E+000							
Pb-210	70			Y	N	Y	2.000E-003	
	2.000E-003							
Pb-210	14			N	Y	Y	4.000E-004	
	4.000E-004							
Sr-90	205			Y	N	Y	3.900E+002	
	3.900E+002							
Sr-90	53			N	Y	Y	4.900E+001	
	4.900E+001							
Sr-90	582	2		Y	N	Y	2.259E+002	
	3.390E+001	1.920E+002						
Sr-90	966			N	Y	Y	5.790E+000	
	5.790E+000							

## Site (Data) : RWMF

Stock of waste as at December 2010

Country: CUBA

Reporting Year: 2010

**Spent Sources > 30 years in Storage**

Nuclide	Number of Sources/Total Activity of Sources (GBq)		c o n d	u n c o n d	c a t	Total Activity for all Groups (GBq)	Decay Date
	Group I less than or equal 2 GBq	Group II more than 2GBq					
	num/activity	num/activity					
Am-241	1	2	N	Y	Y	1.277E+001	
	1.670E+000	1.110E+001					
Am-241	6		Y	N	Y	4.060E+000	
	4.060E+000						
Am-241	8464		Y	N	Y	1.540E+001	
	1.540E+001						
Am-241		2	N	Y	Y	2.220E+002	
		2.220E+002					
Am-241	1	18	N	Y	Y	1.471E+003	
	1.110E+000	1.470E+003					
Am-241	18279		N	Y	Y	3.520E+000	
	3.520E+000						
Am-241	5	1	N	Y	Y	1.147E+001	
	7.770E+000	3.700E+000					
Am-241	2		N	Y	Y	1.040E+000	
	1.040E+000						
Am-241	5	9	Y	N	Y	5.141E+001	
	8.510E+000	4.290E+001					
Bi-207	1		N	Y	Y	3.000E-005	
	3.000E-005						
C-14	5		Y	N	Y	2.800E-005	
	2.800E-005						
C-14	10		N	Y	Y	8.240E-004	
	8.240E-004						

## Site (Data) : RWMF

Stock of waste as at December 2010

Country: CUBA

Reporting Year: 2010

I-129	2		N	Y	Y	4.500E-006	
	4.500E-006						
Ni-63	4		N	Y	Y	1.110E+000	
	1.110E+000						
Ni-63	4		Y	N	Y	1.550E+000	
	1.550E+000						
Pu-238	2		N	Y	Y	2.400E+000	
	2.400E+000						
Pu-238	1	4	N	Y	Y	7.212E+002	
	1.200E+000	7.200E+002					
Pu-238	6		N	Y	Y	6.750E+000	
	6.750E+000						
Pu-238	14		N	Y	Y	8.880E+000	
	8.880E+000						
Pu-238	2		N	Y	Y	2.000E-004	
	2.000E-004						
Pu-239		6	N	Y	Y	1.340E+003	
		1.340E+003					
Pu-239	41		N	Y	Y	1.860E-002	
	1.860E-002						
Ra-226	1009		Y	N	Y	1.700E+002	
	1.700E+002						
Ra-226	13		N	Y	Y	3.950E-001	
	3.950E-001						
Ra-226	62		Y	N	Y	7.950E+000	
	7.950E+000						
U-238	4		N	Y	Y	1.500E-006	
	1.500E-006						

**Site (Data) : RWMF**

Stock of waste as at December 2010

Country: CUBA

Reporting Year: 2010

**Multiple Nuclides SRS in Storage**

Nuclide	Activity of Sources (GBq)	cond	uncond	cat	Decay Date
Am-241	1.000E-004	Y	N	Y	
Sr-90	1.000E-004	Y	N	N	

## Regulators

Country: CUBA

Reporting Year: 2010

<b>Name:</b>	<b>CNSN</b>
Full Name:	National Center for Nuclear Safety
Divison:	
City or Town:	Havana
Main Website:	

Comment

**# 7240: Establishment of Regulatory Authority**

The Decree-Law 207: "On the use of nuclear energy" establishes, in the article 4 that the Minister of Science Technology and the Environment (CITMA) is responsible for supervising, implementing and controlling the Government policy regarding the use of nuclear energy. The regulation and control for the safe use of nuclear energy and for the control of nuclear materials is implemented through the National Center for Nuclear Safety (CNSN).

## Regulations / Laws

Country: CUBA

Reporting Year: 2010

<b>Name:</b>	<b>DL-207</b>		
Title or Name:	On the Use of Nuclear Energy		
Reference Number:	Decree - Law 207		
Date Promulgated or Proclaimed:	2/17/2000	Law	

Comment # 289: Decree Law 207 and HLW

Although there is not HLW at present in Cuba, the Decree Law 207 includes spent fuel.

<b>Name:</b>	<b>Res-121</b>		
Title or Name:	Regulation for the Safe Transport of Radioactive Materials		
Reference Number:	Resolution 121/2000 CITMA		
Date Promulgated or Proclaimed:	12/15/2000	Regulation	

<b>Name:</b>	<b>Res-25</b>		
Title or Name:	Regulation for the Authorization of Practices Associated with the Use of Ionizing Radiation		
Reference Number:	Resolution 25/98		
Date Promulgated or Proclaimed:	7/6/1998	Regulation	

<b>Name:</b>	<b>Law 81</b>		
Title or Name:	Law 81 on the Environment		
Reference Number:	Law 81		
Date Promulgated or Proclaimed:	7/11/1997	Law	

<b>Name:</b>	<b>Res-35</b>		
Title or Name:	Regulation for the safe management of radioactive waste		
Reference Number:	Resolution 35 / 2003 CITMA		
Date Promulgated or Proclaimed:	3/10/2003	Regulation	

<b>Name:</b>	<b>Cuban BSS</b>		
Title or Name:	Cuban Basic Safety Standards		
Reference Number:	Join Resolution CITMA MINSAP		
Date Promulgated or Proclaimed:	1/4/2002	Regulation	



## Regulations / Laws

Country: CUBA

Reporting Year: 2010

<b>Name:</b>	<b>Guide01/04</b>	
Title or Name:	Unconditional Clearance Levels for solid materials with low radioactive content and for liquid and gas discharges to the environment	
Reference Number:	Resolution 01/2004 CNSN	
Date Promulgated or Proclaimed:	1/9/2004	Regulation

Comment **# 9778: Regulation Guide01/04**

This is a guidance document that supports the Regulation for Radioactive Waste Management (Resolution 35/2003). The criteria for unconditional clearance, as well as unconditional clearance levels are contained in this guide, as they are not included in the regulation

<b>Name:</b>	<b>Guide02/04</b>	
Title or Name:	Guidance for the implementation of the Regulation for the Safe Transport of Radioactive Materials	
Reference Number:	Resolucion 2/2004 CNSN	
Date Promulgated or Proclaimed:	1/15/2004	Regulation

<b>Name:</b>	<b>Personnel</b>	
Title or Name:	Regulation for selection, training and authorization of personnel executing practices associated with the use of ionizing radiation	
Reference Number:	Joint Resolution CITMA MINSAP	
Date Promulgated or Proclaimed:	3/24/2004	Regulation

<b>Name:</b>	<b>Res-58</b>	
Title or Name:	Prohibition on the importation of and other regulations for the use of lighting rods	
Reference Number:	Resolution 58/2003 CITMA	
Date Promulgated or Proclaimed:	7/22/2003	Regulation

<b>Name:</b>	<b>Res-96</b>	
Title or Name:	Regulation for the import, distribution, assembly and use of smoke detectors	
Reference Number:	Resolution 96/2003 CITMA	
Date Promulgated or Proclaimed:	2/16/2004	Regulation

## Regulations / Laws

Country: CUBA

Reporting Year: 2010

<b>Name:</b>	<b>Res-6</b>	
Title or Name:	Regulation for the recognition of competence of the services for radiation safety	
Reference Number:	Resolution 6/2004 - CITMA	
Date Promulgated or Proclaimed:	1/13/2004	Regulation

<b>Name:</b>	<b>DL-208</b>	
Title or Name:	On the National System for accounting and control of nuclear materials	
Reference Number:	Decree 208	
Date Promulgated or Proclaimed:	5/24/1996	Law

<b>Name:</b>	<b>Res-62</b>	
Title or Name:	Regulation for the accounting and control of nuclear materials	
Reference Number:	Resolution 62/96 CITMA	
Date Promulgated or Proclaimed:	7/12/1996	Regulation

<b>Name:</b>	<b>ScrapMetal</b>	
Title or Name:	Regulation for the control on the import and export of scrap metal	
Reference Number:	Joint Resolution CITMA-MINCEX	
Date Promulgated or Proclaimed:	4/29/2002	Regulation

## Milestones

Country: CUBA

Reporting Year: 2010

Start Year or Reference Year:	2010	End Year:	2010
Description of Milestone:			
Two research irradiator facilities were decommissioned and the disused high activity sources were transferred to the storage facility			
Start Year or Reference Year:	2009	End Year:	2010
Description of Milestone:			
The project for remodelation of the storage facility started. the soil removal operations were carried out. The facility is ready for constrution improvements (that will be carried out in 2012)			
Start Year or Reference Year:	2008	End Year:	
Description of Milestone:			
A new project started for redesigning and reconstructing the Storage Facility for Radioactive Waste in Cuba. After 20 years of operation, because of the influence of environmental conditions, some parts of the facility were deteriorated. Reconstruction activities are necessary to extend the storage period for at least 30 years more, guarantying the waste packages remain safely stored and retrievable for the final disposal in the future. Another important aspect to assure the retrievability of radioactive waste is the waste package. For that reason the project is also oriented to the definition of waste acceptance criteria for the storage facility and the control methods for waste package to be stored in it. Quality management and general operational issues in the storage facility would be also improved. The project was delayed because of financial contrans.			
Start Year or Reference Year:	2007	End Year:	
Description of Milestone:			
The Ra-226 disused radioactive sources were conditioned according to the IAEA recomendations			
Start Year or Reference Year:	2005	End Year:	2006
Description of Milestone:			
A National Technical Cooperation Project was developed with the IAEA. The objective was to improve waste management activities in the country, mainly at generator institutions.			
Start Year or Reference Year:	2005	End Year:	
Description of Milestone:			
A radiochemical laboratory at the International Center for Neurological Restoration (CIREN) was decommissioned. This laboratory used 14C for radiochemical basic research, but this practice concluded and the institution requested the release of this facility from regulatory control. Decommissioning services were provided by the CPHR.			
Start Year or Reference Year:	2002	End Year:	2004
Description of Milestone:			
The Regulation for the Safe Management of Radioactive Waste was developed and implemented in March 2003. The Guide "Unconditional Clearance Levels for solid materials with low radioactive content and for liquid and gas discharges to the environment" implemented in 2004			

## Milestones

Country: CUBA

Reporting Year: 2010

Start Year or Reference Year:	1999	End Year:	2000
Description of Milestone:			
Development of the acceptance requirements for the wastes that will be collected from the users. Wastes are segregated at the point of origin in accordance with established classification.			
Start Year or Reference Year:	1999	End Year:	2001
Description of Milestone:			
Establishment of requirements and methods for low and intermediate level waste package acceptability in the storage facility.			
Start Year or Reference Year:	1999	End Year:	2001
Description of Milestone:			
The safety analysis of the present Storage Facility was carried out in order to evaluate the possibility to use it as long term storage. This analysis demonstrated that the facility needs to be upgraded			
Start Year or Reference Year:	1999	End Year:	2000
Description of Milestone:			
Decommissioning of a brachytherapy facility at the Oncology Hospital in Havana. This facility used Ra-226 sources for the brachytherapy service.			
Start Year or Reference Year:	1999	End Year:	
Description of Milestone:			
The Waste Processing Facility (WPF) was put into operation. The facility was authorized for compaction of solid waste, conditioning of disused sealed sources (except Ra-226) and storage of radioactive waste and disused sealed sources. In 2006, because of deficiencies detected in the canalization system of the facility, the operations in the WPF were drastically reduced. Just few relevant operations were allowed, until the canalization system is repaired and upgraded. In 2008 the canalization system was completely repaired and a new system for homogenization, sampling and collection of contaminated effluents was installed and put into operation. The CPHR applied for the authorization to the Regulatory Body. The License was granted at the beginning of 2009, all operations were authorized.			
Start Year or Reference Year:	1997	End Year:	2002
Description of Milestone:			
Establishment of a Quality Management System (QMS) for the radioactive waste management service, including all the stages: from collection of waste until storage as conditioned packages. The QMS was internally certified in the Center for Radiation Protection and Hygiene, according to the ISO 9001 Standard			
Start Year or Reference Year:	1996	End Year:	1997
Description of Milestone:			
Radiological characterization of unknown disused sealed sources			

## Milestones

Country: CUBA

Reporting Year: 2010

Start Year or Reference Year:	1996	End Year:	1997
Description of Milestone:			
Chemical and radiological characterization of centralized, stored low-level liquid waste.			
Start Year or Reference Year:	1995	End Year:	1997
Description of Milestone:			
A National Technical Cooperation Project was developed with the IAEA. The necessary equipment for waste characterization, radiation protection and for quality and process control at the Waste Treatment and Storage Facility was supplied under this project. A number of personal were trained as part of this TC Project.			
Start Year or Reference Year:	1988	End Year:	1991
Description of Milestone:			
The construction of the Waste Processing and Storage Facility (WPSF). The WPSF was put into operation in 1988 and the centralized collection of radioactive waste was implemented around the country. The first two collections of disused sealed radioactive sources were carried out in 1988 and 1991.			
Start Year or Reference Year:	1986	End Year:	2004
Description of Milestone:			
A facility in the Oncology Hospital, contaminated with Cs-137 was decommissioned. It was a former brachytherapy facility that was used as storage facility for disused sealed sources at the beginning of eighties.			
Start Year or Reference Year:	1985	End Year:	
Description of Milestone:			
First conditioning activities were carried out in the country. Solid and liquid radioactive waste generated in research activities were immobilized.			

## Policies

Country: CUBA

Reporting Year: 2010

## National Systems

Policy	(Yes;Partially;No)
Q14 Has your Country implemented a national policy for radioactive waste management?	Yes
Comment <b># 233: Policy</b>	
<p>The national policy for radioactive waste management is developed in accordance with the objective and principles established in the IAEA Safety Series No. 111-S-1.</p> <p>There exist in the country the adequate capabilities for the safe management of radioactive waste:            The National Center for Nuclear Safety (The Regulatory Body) is responsible for the licensing and supervision of radioactive and nuclear installations and for the control of generated radioactive waste.</p> <p>There is a Waste Processing and Storage Facility adequate to the amount and types of radioactive waste generated in the country.</p> <p>The required regulatory infrastructure was created (including Laws and Regulations) for the control of radioactive waste. The Center for Radiation Protection and Hygiene is responsible for centralized collection, transportation, treatment, conditioning and long term storage of radioactive waste, as well as for developing new waste conditioning and containment methods</p>	
Comment <b># 17720: Policies National Systems-Policy</b>	
<p>The policy and strategies for radioactive waste management are being improved at present according to IAEA recommendations.</p>	

Strategies	(Yes;Partially;No)
Q15 Has your country developed strategies to implement a national policy?	Yes
Comment <b># 234: Strategies</b>	
<p>Radioactive waste management is one of the topics in the strategy of the Minister of Science Technology and Environment for the next five year. New research programmes will be developed with the aims of improving operational and regulatory capabilities for dealing with radioactive waste.</p>	

## Policies

Country: CUBA

Reporting Year: 2010

Requirements		(Yes;Partially;No)
Q17	identified the parties involved in the different steps of radioactive waste management	Yes
Q18	specified a rational set of safety, radiological and environmental protection objectives	Yes
Q19	implemented a mechanism to identify existing and anticipated radioactive wastes	Yes
Q20	implemented controls over radioactive waste generation	Yes
Q21	identified available methods and facilities to process, store and dispose of radioactive waste on an appropriate time-scale	Partially
Q22	taken into account interdependencies among all steps in radioactive waste generation and management	Yes
Q23	implemented appropriate research and development to support the operational and regulatory needs	Yes
Q24	implemented a funding structure and the allocation of resources that are essential for radioactive waste management	Yes
Q25	implemented formal mechanisms for disseminating information to the public and for public consultation	Partially

Comment **# 235: Interdependencies**

The existing facility for radioactive waste management is adequate for the amount and types of generated radioactive waste. The wastes are segregated in the point of origin according to their characteristics and existing methods for treatment and conditioning.

Comment **# 236: Resources**

Final disposal of radioactive wastes is financed by the Government (who will centralized a budget provided by the licensed institutions), meanwhile the other steps of radioactive waste management are financed by the waste generators and the Center for Radiation Protection and Hygiene. Research programmes and regulatory activities are financed by the Minister of Science, Technology and Environment. The Government, through the Minister of Education, is responsible for guarantying the personal capabilities.

Responsibilities		(Complete;Incomplete)
Q28	establish and implement a legal framework for the management of radioactive waste	Complete
Q29	establish or designate a regulatory body that has the responsibility for carrying out the regulatory function with regard to safety and the protection of human health and the environment.	Complete
Q30	define the responsibilities of waste generators and operators of waste management facilities	Complete
Q31	provide for adequate resources	Complete
Q33	enforce compliance with regulatory requirements	Complete
Q34	implement the licensing process	Complete
Q35	advise the government	Complete
Q37	identify an acceptable destination for the radioactive waste	Complete
Q114	comply with legal requirements	Complete

## Policies

Country: CUBA

Reporting Year: 2010

Activities		(Yes;Partially;No)
Q43	perform safety and environmental impact assessments for radioactive waste management facilities	Yes
Q44	ensure adequate radiation protection for workers, the general public and the environment	Yes
Q45	ensure suitable staff, equipment, facilities, training and operating procedures are available to perform the safe radioactive waste management steps	Yes
Q46	establish and implement a quality assurance programme for the radioactive waste generated or its processing, storage and disposal	Yes
Q47	establish and keep records of appropriate information regarding the generation, processing, storage and disposal of radioactive waste, including an inventory of radioactive waste	Yes
Q48	provide surveillance and control of activities involving radioactive waste as required by the regulatory body	Yes
Q49	collect, analyze and, as appropriate, share operational experience to ensure continued safety improvements in radioactive waste management	Yes
Q50	conduct or otherwise ensure appropriate research and development to support operational needs in radioactive waste management	Yes

Clearance		(Yes;No)
Q128	Does your country have "clearly defined clearance levels based on radiological criteria, with policy statements that material below those levels can be recycled or disposed of with non-radioactive wastes"?	Yes
Q129	Has your country ever used a "case-by-case" approach to clearing radioactive wastes (excluding spent/disused sealed radioactive sources)?	No
Q130	Has your country ever used clearance levels to dispose of, reuse or recycle radioactive waste as non-radioactive waste or as a non-radioactive resource (excluding spent/disused sealed radioactive sources)?	Yes

Attachment #1212: Questionnaire

Guiadesechos.pdf

The Safety Guide 01/2004 of the Regulatory Authority establishes the unconditional clearance levels for solid materials with very low activity content and for release of liquids and gases to the environment



## Policies

Country: CUBA

Reporting Year: 2010

## Disposal Facilities

Licensing		(Yes - All;Yes - Some;No)
Q53	Environmental Assessment (EA)	Yes - All
Q54	Environmental Impact Statement (EIS)	Yes - All
Q55	Performance Assessment (PA)	Yes - All
Q56	Quality Assurance (QA)	Yes - All
Q57	Safety Assessment (SA)	Yes - All
Q59	If Quality Assurance is part of your Country's current, waste disposal facility licensing policy, does the QA Program conform to international standards (such as the ISO9000 series)?	Yes - All

Comment **# 239: Disposal facility - Policy**

Although there is not in operation any disposal facility in the country, these topics are included in environmental regulations and radiation safety regulations that apply to the management of radioactive wastes.

Operation		(Yes - All;Yes - Some;No)
Q60	Does your Country have formal, documented waste acceptance criteria for its operating or proposed disposal facilities?	No

Comment **# 240: Waste Acceptance Criteria**

There is not any disposal facility for radioactive waste in operation in the country. Nevertheless the Waste Acceptance Criteria, Waste Package Specifications and Control Methods are defined for the operating storage facility.

Post-Closure		(Yes;No)
Q61	Does your Country have any written policies to address the maintenance of records that describe the design, location and inventory of waste disposal facilities?	No
Q63	Does your Country have any written policies to address active institutional controls or passive institutional controls, such as monitoring or access restrictions?	No

## Policies

Country: CUBA

Reporting Year: 2010

## Processing/Storage

Policies/Procedures		(Yes;No)
Q73	waste sorting/segregation	Yes
Q74	waste minimization	Yes
Q75	waste storage	Yes
Q76	processing and/or storing and/or disposing of nuclear fuel cycle waste separately from non-nuclear fuel cycle waste (also known as nuclear applications waste)	No
Q78	Does your country have any legislation, regulation, or policy that waste processing must take place prior to storage (see following note)	Yes

Comment # 241: Procedures

The centralized Waste Processing and Storage Facility has implemented a Quality Assurance programme including all these operations. A Safety Guide was issued for generators, explaining the way they have to manage radioactive wastes. There is not nuclear fuel cycle waste in the country.

Implementation		(Yes;No)
Q80	In your Country are there any waste processing facilities at the same location where the waste is generated?	No
Q81	In your Country are there any centralized waste processing facilities?	Yes
Q82	In your Country are there any mobile waste processing facilities?	No

Foreign		(Yes;No)
Q121	Has your country sent any wastes or spent fuel to another country for processing (reprocessing for fuel)?	No
Q124	Has your country accepted any wastes or spent fuel from another country for processing (reprocessing for fuel)?	No

## Policies

Country: CUBA

Reporting Year: 2010

## Spent/Disused SRS

Registration		(Yes;No)
Q84	Is there a national level registry?	Yes
Q85	If answer was yes, is the registry used only for disused/spent SRS?	Yes
Q87	Are there regional-level registries (one or more)?	No
Q90	Are there local-level registries (one or more)?	Yes
Q115	If the answer was yes, are any registries used only for disused/spent SRS?	Yes

Procedures		(Yes;No)
Q91	Does your Country have documented procedures in place to ensure that sealed radioactive sources (SRS) are transferred to secure facilities in a timely manner after their user declares them to be spent?	Yes

## Comment # 242: Spent SRS

The Regulation for the Safety of Radioactive Waste Management establishes in the Article 59: "The Licensee who imports a sealed radioactive source shall take the reasonable measures to return the source to the supplier once it has been declared disused. For this purpose, an agreement shall be signed between the Licensee and the Supplier. Should this not be the case, the disused sealed source shall be transferred to a waste management facility."

Agreements		(Yes;No)
Q93	Government to Government agreements	No
Q94	Government - Supplier agreements	No
Q95	Supplier-User agreements	Yes
Q97	Do any agreements include suppliers that are outside of your Country?	Yes

## Comment # 243: Return the SRS

The agreements for returning the spent sealed radiation sources to their suppliers do not cover all the SRS that are in use at present.

Release / Disposal		(Yes;No)
Q99	Does your Country have any regulations to free-release spent sealed radioactive sources (SRS)?	Yes
Q100	Has your Country disposed of spent SRS in existing disposal facilities for LILW or HLW waste?	No
Q101	Does your Country plan to dispose of spent SRS in existing or planned disposal facilities for LILW or HLW waste?	No
Q102	Has your Country implemented dedicated disposal facilities for spent SRS?	No
Q103	Does your Country have plans to implement dedicated disposal facilities for spent SRS?	No

## Policies

Country: CUBA

Reporting Year: 2010

## Import-Export

## Radioactive Waste

(Yes;No)

Q104 Does your Country have laws or Regulations restricting either the import or export of radioactive waste (excluding spent fuel)? Yes

Comment # 244: Import of RadWaste

The Law 81, On the Environment, defined that the import of radioactive wastes required the authorization of the Minister of Science, Technology and Environment. The export is not covered in the Law.

## Spent Fuel

(Yes;No)

Q105 Does your Country have laws or Regulations restricting either the import or export of spent fuel? No

## Liquid HLW

## Storage

(Yes;No)

Q106 Does your Country have high-level liquid wastes in storage? No

## UMMT

## Responsibility

(Yes;No)

Q110 Does your Country have any Uranium Mine and Mill Tailings sites that do not have a designated authority to manage them? No

## Policies

Country: CUBA

Reporting Year: 2010

## Decommissioning

## Funding

(Yes - All;Yes - Some;No)

Q111 Does your Country require that funds should be set aside in support of future waste management activities, such as decommissioning activities? Yes - Some

Comment **# 245: Decommission**

Decommissioning activities in the country are financed by the Government and the institutions where the decommissioning is carried out.

## Facilities

(Yes;No)

Q119 Does Your Country have any nuclear fuel cycle facilities? No

Q120 Does Your Country have any nuclear applications facilities (non fuel cycle facilities)? Yes

## Timeframe

(Yes - All;Yes - Some;No)

Q113 Does your Country require a time frame for the decommissioning of non-nuclear fuel cycle facilities once these facilities cease operation? Yes - All

Comment **# 7241: Time frame for decommissioning**

Decommissioning activities performed up to now in the country have shown that the decommissioning of radioactive facilities could not be carried out immediately after shutdown because the necessary resources were not available.

## Radionuclide Inventory by Waste Class

Country: CUBA

Reporting Year: 2010

**No data available.**

## Future Outlook

Country: CUBA

Reporting Year: 2010

**Data not available.**

## Future Outlook

Country: CUBA

Reporting Year: 2010

**Data not available.**



## Future Outlook

Country: CUBA

Reporting Year: 2010

**Data not available.**

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