CYPRUS - National Profile

a. National Framework for management of radioactive waste and spent fuel

Cyprus does not operate or plan to operate in the medium term nuclear power plants, research reactors or other nuclear installations or uranium and/or thorium mines. Ionizing radiation in Cyprus is used mainly in medicine, either for diagnostic or for therapeutic purposes. There are also some applications of ionizing radiation in industry and construction, in research and in education.

Thus Cyprus does not possess any amount of spent fuel and the only radioactive waste produced in the country is limited to small amounts of short lived radioisotopes, mainly from nuclear medicine applications.

Cyprus policy on radioactive waste management is tailored to the use of radioactive materials and the relevant practices in the country. All practices where radioactive materials are used have to be licensed under the radiation protection and nuclear safety legislation. Small amounts of short lived radioactive waste, produced in nuclear medicine departments, are kept until their activity is low enough to be disposed as normal waste. Also, very small amounts of radioactive waste produced in research activities are kept in storage for licensed disposal or shipment abroad.

No radioactive materials or sources are produced in Cyprus and none have been produced in the past, and all radioisotopes or sources used in the country are imported, mainly, from European countries. A condition imposed on the licensees during the licensing procedure is to return back to the supplier/manufacturer, outside Cyprus, any disused/no longer needed source.

Also, any waste produced from research activities, which cannot be disposed as normal waste, must be kept in storage, until its activity is low enough to be disposed as normal waste or is exported/shipped abroad.

In addition, all scrap metals exported/shipped to various countries are monitored for radioactivity before shipment. Finally, all disused sources, such as cobalt teletherapy units and small sources from medical applications, lightning rods, smoke detectors, small sources for educational purposes etc. have been collected in a licensed temporary storage until a final solution (eg. shipment abroad for disposal) is decided.

Cyprus does not have any amounts of radioactive waste in storage. Only disused sources in temporary storage are registered in the inventory kept by the Regulatory Authority.

b. National legal and regulatory framework

The regulatory basis for radiation protection, nuclear safety (including nuclear security), and radioactive waste management is the Protection from Ionising Radiation and Nuclear Safety Laws of 2002 to 2011,

which was enacted on 12 July 2002 (Law 115(I)/2002), and amended twice, in 2009 (Law 8(I)/2009) and in 2011 (Law 127(I)/2011), and various sets of Regulations issued under the Law, namely:

(a) The Protection from Ionising Radiation (Basic Principles) Regulations of 2002 (P.I. 494/2002)

(b) The Protection from Ionising Radiation (Informing the Public about Measures to be applied in Case of Emergency) Regulations of 2002 (P.I. 495/2002)

(c) The Protection from Ionising Radiation (Medical Exposure) Regulations of 2002 (P.I. 497/2002)

(d) The Protection from Ionising Radiation (Control of High-Activity Sealed Radioactive Sources and Orphan Sources) Regulations of 2006 (P.I. 30/2006)

(e) The Protection from Ionising Radiation (Supervision and Control of Shipments of Radioactive Waste and Spent Fuel) Regulations of 2009 (P.I. 86/2009)

(f) The Protection from Ionising Radiation and Nuclear Safety (Responsible and Safe Management of Spent Fuel and Radioactive Waste) Regulations of 2014 (P.I. 178/2014) and

g. The Protection from Ionising Radiation and Nuclear Safety (Protection of the Health of the General Public with Regard to Radioactive Substances in Water Intended for Human Consumption) Regulations of 2016 (P.I. 54/2016)

The Radiation Inspection and Control Service of the Department of Labour Inspection, under the administrative supervision of the MLWSI, acts as the Regulatory Authority (RA) for Radiation Protection, Radioactive Waste Management and Nuclear Safety in Cyprus.

The Regulatory Body is effectively independent from the use or promotion of ionizing radiation. The RA is presently staffed with one Senior Labour Inspection Officer (Head) and four Labour Inspection Officers, all qualified in science or engineering and with experience and training in radiation protection and nuclear safety and security.

The National Policy and Strategy on the Responsible and Safe Management of Radioactive Waste and the National Programme on the responsible and safe management of radioactive waste in the Republic of Cyprus documents were drafted in 2015 and submitted to the European Commission under Articles 11, 12, 13 and 15 of the Council Directive 2011/70/Euratom of 19 July 2011 on the responsible and safe management of spent fuel and radioactive waste and Regulations 14, 15 and 16 of P.I. 178/2014 (the "Protection from Ionising Radiation and Nuclear Safety (Responsible and Safe Management of Spent Fuel and Radioactive Waste) Regulations of 2014")

c. Radioactive waste management, decommissioning and spent fuel strategy and current practices & technologies

Cyprus does not have any amounts of radioactive waste in storage. Only disused sources in temporary storage are registered in the inventory kept by the Regulatory Authority. DSRS are not considered Waste.

d. Radioactive waste classification, waste and spent fuel quantities (inventory) (including disused sources that are declared radioactive waste)

Table 1 Radioactive Waste In Storage (including spent fuel that is considered waste)

Route Waste Class	Processed (type)/ Unprocessed)	Total Current Volume (m^3)	Estimated Disposal Volume (m^3)	Distribution (%)							Planned Disposal Route (if known)
				RO	FFE	RP	NA	DF	DC / RE	ND	
Total of all Classes	0	(m^3)	(m3)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	

NEWMDB waste origin type codes:

RO – reactor operations

FFE – fuel fabrication & enrichment

RP – fuel reprocessing

NA – nuclear applications

DF - defence

DC/RE – decommissioning & remediation

ND – Not Determined

Table 2 Radioactive Waste Disposed (as disposed volume)

Waste Class	Processed (not)	Total Volume (m^3)	Distribution (%)							
			RO	FFE	RP	NA	DF	DC / RE	ND	Disposal Route Used
Total of All Classes	Not processed	(m3) Less than 1m^3 Less than 9000 GBq of medical waste	(%) 0	(%) 0	(%) 0	(%) 100	(%) 0	(%) 0	(%) 100	Disposed off as regular waste, through the Sewage system
Exempt waste (EW)	Not processed	(m3) Less than 1m^3 Less than 9000 GBq of medical waste	(%) 0	(%) 0	(%) 0	(%) 100	(%) 0	(%) 0	(%) 0	Disposed off as regular waste, through the Sewage system

Table 3 Spent fuel in Storage (MTHM)

Type	Current Amount (NPP)	Current Amount (Research Reactors)
Total Spent Fuel Storage	0	0
Wet storage (AR)	0	0
Wet storage (AFR)	0	0
Dry storage (AR)	0	0
Dry storage (AFR)	0	0
Total spent fuel held in storage for other countries (amounts also included above)	0	0

Table 4 Spent fuel sent for reprocessing (in the country or sent to another country)[1] (MTHM)

Type	Current Amount (NPP)	Current Amount (Research Reactors)
Total amount Spent Fuel sent to Reprocessing (in your country)	0	0
Total amount Spent Fuel sent to Reprocessing (in another country)	0	0
Total amount of Spent Fuel received from another country for reprocessing and recycling	0	0
Total amount of Spent Fuel (MTHM) or radioactive waste (cubic metres) returned to country of origin for storage/disposal	0	0

AR = "at reactor site", including fuel pools at NPP

AFR = "away from reactor site"

In the case of disused sources not included in volumes according to the relevant national waste classes, please include a similar table for disused sources declared as numbers of items stored and disposed.

Table 5 below shows a translation matrix from national classification system to IAEA classes.

Table showing conversion factors from stored waste volumes to disposed waste volume for forecasts, if required.

[1] All years

Table 5 Example of a translation matrix (from NEWMDB) that can be used for transition from a national classification system to IAEA classification (see Section 3)

National Waste Classification Name	VLLW	LLW	ILW	HLW
VLLW	100%			
LLW		100%		
ILW			100%	
HLW				100%

NOTE: Cyprus uses the IAEA classification system.

Table 6 (sample of data based on format of table from INFCIS)

Type	Planned	Construction	Commissioning	In Operation	Shutdown	Decomm.	Other	Total
Spent Fuel Storage	0	0	0	0	0	0	0	0
Spent Fuel Reprocessing and Recycling	0	0	0	0	0	0	0	0
Spent Fuel Conditioning	0	0	0	0	0	0	0	0
Spent Fuel disposal	0	0	0	0	0	0	0	0
Waste processing	0	0	0	0	0	0	0	0
Waste storage	0	0	0	0	0	0	0	0
Waste disposal	0	0	0	0	0	0	0	0

Table 7 Summary of major sources of waste (from IAEA PRIS, INFCIS & RRDB databases)

Type	Planned	Construction	Commissioning	In Operation	Shutdown	Decomm.	Other	Total
Research reactors	0	0	0	0	0	0	0	0
Nuclear Power reactors	0	0	0	0	0	0	0	0
Spent Fuel Reprocessing and Recycling	0	0	0	0	0	0	0	0

e. Trends and future prospects (volumes of waste and spent fuel arising, waste and spent fuel management facilities)

Table 8 e. Trends and future prospects (estimation of volumes of waste and spent fuel arising, waste and spent fuel management facilities)

Type	Current amount	Estimated Current amount when prepared for disposal*	Current Disposal Capacity	Total forecast at 2030		Total forecast at 2050	
Spent Fuel Storage	0			0		0	
Wet storage (AR)	0			0		0	
Wet storage (AFR)	0			0		0	
Dry storage (AR)	0			0		0	
Dry storage (AFR)	0			0		0	
Total amount Spent Fuel sent to Reprocessing and Recycling	0			0		0	
Total amount Spent fuel disposed	0		MTHM	0		0	
Waste in storage:	0	0		0		0	
Waste disposal:	Less than $1m^3$ Less than 9000 GBq of medical waste		-	Less than $1m^3$ Less than 10000 GBq of medical waste		Less than $1m^3$ Less than 12000 GBq of medical waste	
Exempt waste (EW)	Less than $1m^3$ Less than 9000 GBq of medical waste		-	Less than $1m^3$ Less than 10000 GBq of medical waste		Less than $1m^3$ Less than 12000 GBq of medical waste	

Sources of data, assumptions (especially for future waste forecasts) and references

Medical Centres, Import Licenses, RA records.

List of references

The National Policy and Strategy on the Responsible and Safe Management of Radioactive Waste and the National Programme Documents

The Protection from Ionising Radiation and Nuclear Safety Laws of 2002 to 2011 and Regulations issued under these Laws

IAEA Documents e.g. General Safety Guide No. GSG-1 “Classification of radioactive waste”, IAEA, Vienna, 2009

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