Country Waste Profile Report for

BULGARIA

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

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Waste Classification Schemes

Country: BULGARIA Reporting Year: 2010

Waste Class Matrix: **IAEA Def.** This country does use the IAEA Scheme: Yes

Description: The Agency's standard matrix

	Distribution %			
Waste Class Name	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 **# 7363: Waste disposal limits**

National classification of waste is defined in the Regulation on Safety of Waste Management from 2004 and is substantially the same as the IAEA classification. Category 1, "transitional waste", corresponds to IAEA class 1 "exempt waste". Categories 2a and 2b are the same as IAEA's LILW-SL and LILW-LL. Category 3 is HLW, differing from IAEA definition in that the value of 2kW/m3 is not explicitely defined.

Waste Class Matrix: **NPP** Yes

Description: The nuclear power plant has six classes of LILW-SL waste. Solid waste is categorized depending on the dose rate at 0.1 m from the waste's surface and the liquid waste is categorized according to the total activity concentration.

	Distribution %		
Waste Class Name	LILW-SL	LILW-LL	HLW
Solid-1&2	100.0	0.0	0.0
Solid-3	100.0	0.0	0.0
Liquid	100.0	0.0	0.0

Comment **# 398: Waste classes**

In addition to national categorization, according to which all KNPP waste is category 2a (LILW-SL), the following sub-categorization is introduced in Kozloduy NPP.
Solid waste is categorized and sorted depending on the gamma dose-rate at 10 cm, as follows:
1st class - up to 0.3 mSv/h
2nd class - 0.3 - 10 mSv/h
3rd class - more than 10 mSv/h
Liquid waste is categorized according to its activity concentration, as follows:
1st class (LLW) - up to 0.37 MBq/l
2nd class (ILW) - 0.37 MBq/l - 37 GBq/l
3rd class (HLW) - more than 37 GBq/l

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Waste Classification Schemes

Country: BULGARIA Reporting Year: 2010

Waste Class Matrix: **BGNatl** Yes

Description: high level waste with such a concentration of radionuclides that heat generation shall be considered during storage and disposal

	Distribution %		
Waste Class Name	LILW-SL	LILW-LL	HLW
Category 2b	0.0	100.0	0.0
Category 2a	100.0	0.0	0.0
Category 3	0.0	0.0	100.0

Attachment **#1369: Waste Matrix**

Bulgaria 2004 Waste Regulation.pdf

REGULATION FOR SAFE MANAGEMENT
OF RADIOACTIVE WASTE
Adopted by the Council of Ministers Decree No. 198 of 03.08.2004, promulgated in SG No. 72 of 17.08.2004
(in English)

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

This country uses the IAEA standard definition:

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

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Groups Overview

Country: BULGARIA Reporting Year: 2010

Reporting Group:	**KNPP**
Inventory Reporting Date:	December 2010
Waste Matrix Used:	NPP
Description:	Kozloduy NPP Reporting Group

Site Name	Facility Name	Facilities Defined		
KNPP	AB-1	processing	storage	
	AB-2	processing	storage	
	AB-3	processing	storage	
	CWSF		storage	
	Units 1, 2		storage	
	Units 3, 4		storage	
	WMA-VS		storage	
	WTCP	processing		

Reporting Group:	**Novi han**
Inventory Reporting Date:	December 2010
Waste Matrix Used:	BGNatl
Description:	Novi Han storage and (former) disposal facility

Site Name	Facility Name	Facilities Defined		
Novi Han	Accidental			disposal
	Biological			disposal
	Liquid		storage	
	Solid			disposal
	SRS			disposal
	Stor2000		storage	
	WPF	processing		

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Site (Structure) : KNPP

Country: BULGARIA Reporting Year: 2010

Full Name: Kozloduy NPP

License Holder(s): Kozloduy NPP Plc., 3321 Kozloduy, Bulgaria - for facilities: Units 1,2, Units 3,4, AB-1, AB-2 and AB-3 / State Eneterprise "Radioactive Waste", 51 James Baucher Blvd., 1407 Sofia - for facilities: WMA-VS, WTCP and CWSF

Kozloduy NPP Plc., 3321 Kozloduy, Bulgaria - for facilities: Units 1,2, Units 3,4, AB-1, AB-2 and AB-3 / State Eneterprise "Radioactive Waste", 51 James Baucher Blvd., 1407 Sofia - for facilities: WMA-VS, WTCP and CWSF

The following list the waste management facilities that are located at this site.

Facility:	**AB-1**
Description:	Auxiliary Building, part of original design of Units 1 and 2. Processing of operational liquid waste and storage of solid waste, liquid waste and spent sorbents.

Storage part of facility **AB-1**

The following shows storage status for waste classes and SRS.

Waste Class	Actual	Planned
Solid-1&2	Yes	Yes
Solid-3	Yes	Yes
Liquid	Yes	Yes

List SRS?	No
List UMMT?	No

Capacity:	Solid waste - 7 bunkers with total capacity of 1010 m3 Liquid waste - 5 x 470 m3 High activity sorbents - 2 x 350 m3 Low activity sorbents - 2 x 188 m3

Processing part of facility **AB-1**

The following shows processing status for waste classes and SRS.

Waste CLass	Actual	Planned
Solid-1&2	No	No
Solid-3	No	No
Liquid	Yes	Yes

Type:	Treatment
Year opened:	1974

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Site (Structure) : KNPP

Country: BULGARIA Reporting Year: 2010

Comment **# 9923: Solid-1 and solid-2 classes**

No separation is made on site between solid-1 and solid-2 waste classes. Since major part of the waste is estimated to be solid-1 class, all wastes of these two classes is reported as solid-1. Same comment is valid for the following facilities: AB-2, AB-3, CWSF, WMA-VS.

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Site (Structure) : KNPP

Country: BULGARIA Reporting Year: 2010

Facility:	**AB-2**
Description:	Auxiliary Building, part of original design of Units 3 and 4. Processing of operational liquid waste and storage of solid waste, liquid waste and spent sorbents.

Storage part of facility **AB-2**

The following shows storage status for waste classes and SRS.

Waste Class	Actual	Planned
Solid-1&2	Yes	Yes
Solid-3	Yes	Yes
Liquid	Yes	Yes

List SRS?	No
List UMMT?	No

Capacity:	Solid waste - 7 bunkers with total capacity of 1010 m3 Liquid waste - 5 x 470 m3 High activity sorbents - 2 x 350 m3 Low activity sorbents - 2 x 188 m3

Processing part of facility **AB-2**

The following shows processing status for waste classes and SRS.

Waste CLass	Actual	Planned
Solid-1&2	No	No
Solid-3	No	No
Liquid	Yes	Yes

Type:	Treatment
Year opened:	1980

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Site (Structure) : KNPP

Country: BULGARIA Reporting Year: 2010

Facility:	**AB-3**
Description:	Auxiliary Building, part of original design of Units 5 and 6. Processing of operational liquid waste and storage of solid waste, liquid waste and spent sorbents.

Storage part of facility **AB-3**

The following shows storage status for waste classes and SRS.

Waste Class	Actual	Planned
Solid-1&2	Yes	Yes
Solid-3	Yes	Yes
Liquid	Yes	Yes

List SRS?	No
List UMMT?	No

Capacity:	Solid-1 and solid-2: 2486 m3 Solid-3: 213 m3 Liquid: 3600 m3 Spent sorbents: 2 x 100 m3

Processing part of facility **AB-3**

The following shows processing status for waste classes and SRS.

Waste CLass	Actual	Planned
Solid-1&2	No	No
Solid-3	No	No
Liquid	Yes	Yes

Type:	Treatment
Year opened:	1987

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Site (Structure) : KNPP

Country: BULGARIA Reporting Year: 2010

Facility:	**CWSF**
Description:	Storage facility for conditioned waste (from WTCP)

Storage part of facility **CWSF**

The following shows storage status for waste classes and SRS.

Waste Class	Actual	Planned
Solid-1&2	Yes	Yes
Solid-3	No	No
Liquid	No	No

List SRS?	No
List UMMT?	No

Capacity:	1920 containers with a total volume of 8 m3 each, including the container. Internal volume (capacity) of one container is 5 m3.

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Site (Structure) : KNPP

Country: BULGARIA Reporting Year: 2010

Facility:	**Units 1, 2**
Description:	Storage facility for class "solid-3" operational waste located in the reactor hall of units 1 and 2

Storage part of facility **Units 1, 2**

The following shows storage status for waste classes and SRS.

Waste Class	Actual	Planned
Solid-1&2	No	No
Solid-3	Yes	Yes
Liquid	No	No

List SRS?	No
List UMMT?	No

Capacity:	81.6 m3

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Site (Structure) : KNPP

Country: BULGARIA Reporting Year: 2010

Facility:	**Units 3, 4**
Description:	Storage facility for class "solid-3" operational waste located in the reactor hall of units 3 and 4

Storage part of facility **Units 3, 4**

The following shows storage status for waste classes and SRS.

Waste Class	Actual	Planned
Solid-1&2	No	No
Solid-3	Yes	Yes
Liquid	No	No

List SRS?	No
List UMMT?	No

Capacity:	81.6 m3

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Site (Structure) : KNPP

Country: BULGARIA Reporting Year: 2010

Facility:	**WMA-VS**
Description:	Waste Management Storage Area "Varovo Stopanstvo"

Storage part of facility **WMA-VS**

The following shows storage status for waste classes and SRS.

Waste Class	Actual	Planned
Solid-1&2	Yes	Yes
Solid-3	No	No
Liquid	No	No

List SRS?	No
List UMMT?	No

Capacity:	Total capacity: 11 929 m3.

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Site (Structure) : KNPP

Country: BULGARIA Reporting Year: 2010

Facility:	**WTCP**
Description:	Waste Processing Plant for treatment and conditioning of solid and liquid waste originating from Kozloduy NPP, located on site.

Processing part of facility **WTCP**

The following shows processing status for waste classes and SRS.

Waste CLass	Actual	Planned
Solid-1&2	Yes	Yes
Solid-3	No	No
Liquid	Yes	Yes

Type:	Treatment, Conditioning
Year opened:	2001

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Site (Structure) : KNPP

Country: BULGARIA Reporting Year: 2010

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Site (Data) : KNPP

Stock of waste as at December 2010

Country: BULGARIA Reporting Year: 2010

Site Name: **KNPP**

Full Name: Kozloduy NPP

Inventory Reporting Date: December 2010 Waste Matrix Used: NPP

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

Waste Class: **Solid-1&2**

Waste Class Name	Location / Facility	Proc	Est.	Volume (m³)	RO %	FF/FE %	RP %	NA %	DF %	DC/RE %	ND %
Solid-1&2	Storage / AB-1	N	N	300.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Solid-1&2	Storage / AB-2	N	N	100.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Solid-1&2	Storage / AB-2	Y	N	119.700	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Solid-1&2	Storage / AB-3	Y	N	764.400	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Solid-1&2	Storage / CWSF	Y	N	5175.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Solid-1&2	Storage / WMA-VS	N	N	1564.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Solid-1&2	Storage / WMA-VS	Y	N	1180.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00

Waste Class: **Solid-3**

Waste Class Name	Location / Facility	Proc	Est.	Volume (m³)	RO %	FF/FE %	RP %	NA %	DF %	DC/RE %	ND %
Solid-3	Storage / AB-3	N	N	16.700	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Solid-3	Storage / Units 1, 2	N	N	52.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Solid-3	Storage / Units 3, 4	N	N	32.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00

Waste Class: **Liquid**

Waste Class Name	Location / Facility	Proc	Est.	Volume (m³)	RO %	FF/FE %	RP %	NA %	DF %	DC/RE %	ND %
Liquid	Storage / AB-1	N	N	2368.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Liquid	Storage / AB-2	N	N	2138.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Liquid	Storage / AB-3	N	N	2179.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00

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Site (Data) : KNPP

Stock of waste as at December 2010

Country: BULGARIA Reporting Year: 2010

Processing - Treatment method(s)

Method	Status			
	Planned	R&D program	Current practice method use over the last 5 years	Past Practice
Calcine Dissolution	N	N	Same	N
Chemical Precipitation	N	N	Same	N
Compaction	N	N		Y
Decontamination	N	N		N
Evaporation	N	N	Same	N
Filter Leaching	N	N	Same	N
Filtration	N	N	Same	N
Incineration	Y	N	Same	N
Ion Exchange	N	N	Same	N
Organic Destruction	N	N	Same	N
Oxidation	N	N	Same	N
Radionuclide Separation	Y	N	Same	N
Segregation/Sorting	N	N	Same	N
Shredding and Compaction	N	N		Y
Size Reduction	N	N	Increase	N
Sludge washing	Y	N	Same	N
Super Compaction	N	N		Y
Thermal Treatment (non incineration)	Y	N	Same	N
Wastewater Treatment	N	N	Same	N

Processing - Conditioning method(s)

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

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Site (Structure) : Novi Han

Country: BULGARIA Reporting Year: 2010

Full Name: Novi Han Repository

License Holder(s): State Enterprise "Radioactive Waste"
51 James Baucher Blvd.
1407 Sofia
Bulgaria

The following list the waste management facilities that are located at this site.

Facility:	**Accidental**
Description:	Engineered trench for disposal of LIL solid waste generated during accident (originally planned) and normal operation

Disposal part of facility **Accidental**

The following shows disposal status for waste classes and SRS.

Waste Class	Actual	Planned
Category 2b	No	No
Category 2a	Yes	No
Category 3	No	No

List SRS?	No
List UMMT?	No

Type:	engineered near surface		
Facility is modular?	No		
Capacity existing (m3):	200	Capacity planned (m3):	200
Depth (m):	3-4	Host medium:	crystalline rock (other)

Phase Name	Start Year	End Year	Estimate
planning and/or concept assessment	1960	1960	False
site selection	1960	1962	False
design	1984	1984	False
construction	1984	1984	False
commissioning	1984	1984	False
operation	1984	1994	False
EVENT: operating license suspended	1994		False

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Site (Structure) : Novi Han

Country: BULGARIA Reporting Year: 2010

Facility:	**Biological**
Description:	Concrete vault for disposal of biological waste

Disposal part of facility **Biological**

The following shows disposal status for waste classes and SRS.

Waste Class	Actual	Planned
Category 2b	No	No
Category 2a	Yes	No
Category 3	No	No

List SRS?	No
List UMMT?	No

Type:	engineered near surface		
Facility is modular?	No		
Capacity existing (m3):	80	Capacity planned (m3):	80
Depth (m):	3-4	Host medium:	crystalline rock (other)

Phase Name	Start Year	End Year	Estimate
planning and/or concept assessment	1960	1960	False
site selection	1960	1962	False
design	1962	1962	False
construction	1962	1964	False
commissioning	1964	1964	False
operation	1964	1994	False
EVENT: operating license suspended	1994		False

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Site (Structure) : Novi Han

Country: BULGARIA Reporting Year: 2010

Facility:	**Liquid**
Description:	Liquid waste storage tanks

Storage part of facility **Liquid**

The following shows storage status for waste classes and SRS.

Waste Class	Actual	Planned
Category 2b	No	No
Category 2a	Yes	Yes
Category 3	No	No

List SRS?	No
List UMMT?	No

Capacity:	4 stainless steel tanks 12 m3 each, total capacity 48 m3

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Site (Structure) : Novi Han

Country: BULGARIA Reporting Year: 2010

Facility:	**Solid**
Description:	Concrete vault for disposal of solid waste originating from nuclear applications

Disposal part of facility **Solid**

The following shows disposal status for waste classes and SRS.

Waste Class	Actual	Planned
Category 2b	No	No
Category 2a	Yes	No
Category 3	No	No

List SRS?	No
List UMMT?	No

Type:	engineered near surface		
Facility is modular?	No		
Capacity existing (m3):	237	Capacity planned (m3):	237
Depth (m):	3-4	Host medium:	crystalline rock (other)

Phase Name	Start Year	End Year	Estimate
planning and/or concept assessment	1960	1960	False
site selection	1960	1962	False
design	1962	1962	False
construction	1962	1964	False
commissioning	1964	1964	False
operation	1964	1994	False
EVENT: operating license suspended	1994		False

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Site (Structure) : Novi Han

Country: BULGARIA Reporting Year: 2010

Facility:	**SRS**
Description:	Concrete vault for disposal of spent SRS.

Disposal part of facility **SRS**

The following shows disposal status for waste classes and SRS.

Waste Class	Actual	Planned
Category 2b	No	No
Category 2a	No	No
Category 3	No	No

List SRS?	No
List UMMT?	No

Type:	engineered surface		
Facility is modular?	No		
Capacity existing (m3):	1	Capacity planned (m3):	1
Depth (m):	5.5	Host medium:	crystalline rock (other)

Phase Name	Start Year	End Year	Estimate
planning and/or concept assessment	1960	1960	False
site selection	1960	1962	False
design	1962	1962	False
construction	1962	1964	False
commissioning	1964	1964	False
operation	1964	1994	False
EVENT: operating license suspended	1994		False

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Site (Structure) : Novi Han

Country: BULGARIA Reporting Year: 2010

Facility:	**Stor2000**
Description:	Storage units for acceptance of waste generated in nuclear applications, built after 2000

Storage part of facility **Stor2000**

The following shows storage status for waste classes and SRS.

Waste Class	Actual	Planned
Category 2b	Yes	Yes
Category 2a	Yes	Yes
Category 3	No	No

List SRS?	No
List UMMT?	No

Capacity:	Current capacity according to operating license about 950 m3

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Site (Structure) : Novi Han

Country: BULGARIA Reporting Year: 2010

Facility:	**WPF**
Description:	Waste Processing Facility

Processing part of facility **WPF**

The following shows processing status for waste classes and SRS.

Waste CLass	Actual	Planned
Category 2b	No	No
Category 2a	No	No
Category 3	No	No

Type:	Treatment, Conditioning
Year opened:	1964

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Site (Structure) : Novi Han

Country: BULGARIA Reporting Year: 2010

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Site (Data) : Novi Han

Stock of waste as at December 2010

Country: BULGARIA Reporting Year: 2010

Site Name: **Novi Han**

Full Name: Novi Han Repository

Inventory Reporting Date: December 2010 Waste Matrix Used: BGNatl

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

Waste Class: **Category 2b**

Waste Class Name	Location / Facility	Proc	Est.	Volume (m³)	RO %	FF/FE %	RP %	NA %	DF %	DC/RE %	ND %
Category 2b	Storage / Stor2000	N	N	450.000	0.00	0.00	0.00	100.00	0.00	0.00	0.00

Waste Class: **Category 2a**

Waste Class Name	Location / Facility	Proc	Est.	Volume (m³)	RO %	FF/FE %	RP %	NA %	DF %	DC/RE %	ND %
Category 2a (liquid)	Storage / Liquid	N	N	69.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Category 2a (solid)	Storage / Stor2000	N	N	148.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Category 2a	Disposal / Accidental	N	N	72.800	0.00	0.00	0.00	100.00	0.00	0.00	0.00
Category 2a	Disposal / Biological	Y	N	51.200	0.00	0.00	0.00	100.00	0.00	0.00	0.00
Category 2a	Disposal / Solid	N	N	253.000	0.00	0.00	0.00	100.00	0.00	0.00	0.00

Processing - Treatment method(s)

	Status			
Method	Planned	R&D program	Current practice method use over the last 5 years	Past Practice
Decontamination	N	Y	Same	N
Filtration	N	Y		N
Segregation/Sorting	N	Y	Same	N
Wastewater Treatment	N	Y	Same	N

Processing - Conditioning method(s)

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

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Site (Data) : Novi Han

Stock of waste as at December 2010

Country: BULGARIA Reporting Year: 2010

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Regulators

Country: BULGARIA Reporting Year: 2010

Name:	**BNRA**
Full Name:	Bulgarian Nuclear Regulatory Agency
Divison:	Decommissioning and Radioactive Waste Management
City or Town:	Sofia

Comment **# 6525: Wastes that are regulated by the Regulator**

Matrix IAEA Def. - HLW, LILW-LL, LILW-SL; Matrix NPP - Liquid-1, Liquid-2, Liquid-3, Solid-1, Solid-2, Solid-3

Attachment **#824: Regulator**

2003_App_NRA1.doc

General description of NRA organization

Attachment **#825: Regulator**

2003_App_NRA2.doc

NRA organizational structure

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Regulations / Laws

Country: BULGARIA Reporting Year: 2010

Name:	**RW Safety**	
Title or Name:	Regulation for safe management of radioactive waste	
Reference Number:		
Date Promulgated or Proclaimed:	2004-08-03	Regulation

Comment **# 6527: Wastes that are regulated by the Regulation**

Matrix IAEA Def. - HLW, LILW-LL, LILW-SL

Attachment **#992: Regulation**

Reg_RW_Engl.doc

Regulation for Safe Management of Radioactive Waste

Name:	**SE "RW"**	
Title or Name:	Regulation for the conditions and procedure for transfer of radioactive waste to the state enterprise ?Radioactive Waste?	
Reference Number:	BNRP-2000	
Date Promulgated or Proclaimed:	2004-07-14	Regulation

Comment **# 6529: Wastes that are regulated by the Regulation**

Matrix IAEA Def. - HLW, LILW-LL, LILW-SL

Comment **# 9701: Matters arranged by the Regulation SE**

The entities, which generate radioactive waste as a result of their activities, are obliged to transfer the waste to the State enterprise, which is responsible for the management of the radioactive waste after the deposit.
The regulation defines the conditions and procedure for transferring the radioactive waste to the State enterprise ?Radioactive Waste? and the terms for the transfer, as well as the radioactive waste not eligible for transfer. Specific procedures are defined for transferring radioactive waste generated from previous activities, radioactive waste with unknown owner, or which has been imported to the country and cannot be returned.
The radioactive waste becomes state property at the moment of its transfer to the State enterprise.

Name:	**NPP Safety**	
Title or Name:	Regulation for providing the safety of nuclear power plants	
Reference Number:		
Date Promulgated or Proclaimed:	2004-07-19	Regulation

Comment **# 6530: Matters arranged by the Regulation**

The regulation settles the matters related to the basic criteria and rules for the safety of nuclear power plants based on the concept of in-depth defense.
Subject to regulation are the organizational measures and technical requirements for providing of the safety during site selection, design, construction, commissioning and operation of nuclear power plants. The regulation contains detailed instructions related to the determination of the design basis and safety evaluations, the characteristics of the site and the safety requirements for the nuclear power plant and its systems.
The regulation is developed based on the IAEA safety standards and the reference levels for harmonization of the safety requirements for nuclear power plans, defined by the West European Nuclear Regulators? Association (WENRA).

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Regulations / Laws

Country: BULGARIA Reporting Year: 2010

Name:	**SIR Safety**	
Title or Name:	Regulation for radiation protection during activities with sources of ionizing radiation	
Reference Number:		
Date Promulgated or Proclaimed:	2004-08-04	Regulation

Comment **# 9702: Matters arranged by the Regulation SIR Safety**

The regulation defines the basic requirements and rules for radiation protection during activities with sources of ionizing radiation and the condition and the procedure for accounting of the sources of ionizing radiation. The regulation puts in place requirements for radiation monitoring during activities with sources of ionizing radiation.
The regulation specifies technical and organizational rules for conforming to the established in Bulgaria basic norms for radiation protection.

Name:	**Licensing**	
Title or Name:	Regulation for the procedure for issuing licenses and permits for safe use of nuclear energy	
Reference Number:		
Date Promulgated or Proclaimed:	2004-05-04	Regulation

Comment **# 6532: Wastes that are regulated by the Regulation**

Matrix IAEA Def. - HLW, LILW-LL, LILW-SL

Comment **# 9703: Matters arranged by the Regulation Licensing**

The regulation defines all matters related to the procedures for issuing, changing, renewing, canceling, revoking and controlling the licenses and permits demanded by the Safe Use of Nuclear Energy Act. The structure of the regulation takes into consideration the specifics of the types of nuclear facilities, activities and sites with sources of ionizing radiation. The scope and contents of the required documents is specified taking into account the necessary measures for providing the nuclear safety, radiation and physical protection. For activities with certain types of ionizing radiation sources, based on the lower risk for the population and the environment, alleviations of the required documents is provided.

Name:	**Emergency**	
Title or Name:	Regulation for emergency planning and emergency preparedness in case of nuclear and radiation accident	
Reference Number:		
Date Promulgated or Proclaimed:	2004-07-30	Regulation

Comment **# 6533: Matters arranged by the Regulation**

The regulation defines, in accordance to the provisions of the Safe Use Of Nuclear Energy Act, the conditions and procedure for developing emergency plans and the obligations of the persons who apply them.
The actions and measures for limitation and liquidation of the consequences of nuclear or radiation accident are also defined as well as the criteria for decision taking for their activation and the methods for informing the population. Subject to definition is also the maintenance and control of the emergency preparedness and the interaction between the executive authorities and the licensees or holders of permits according to the Safe Use of Nuclear Energy Act.

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Regulations / Laws

Country: BULGARIA Reporting Year: 2010

Name:	**BNRP**	
Title or Name:	Regulation for the basic norms for radiation protection	
Reference Number:	Reg.10	
Date Promulgated or Proclaimed:	2004-07-30	Regulation

Comment **# 9704: Matters arranged by the Regulation BNRP**

The regulation reflects the requirements of the 96/29/EURATOM Directive, setting the basic standards for protecting the health of personnel and population from the damaging influence of ionizing radiation. The basic principles of radiation protection are developed, and the dose limits for personnel and population are set.
In accordance with the provisions of the Directive, the concept for releasing from control of radioactive substances due to permitted activities, and the concept for limitation of irradiation are introduced.
The Regulation sets requirements for monitoring of the working quarters, and the individual irradiation, as well as for the registration of the results of this monitoring.
The requirements of Directive 90/641/EURATOM for operational protection of outside workers from the damaging influence of ionizing radiation during their activities in the controlled areas are introduced.
In relation to the engagements of the Bulgarian side in the negotiations with the European Union, the Regulation introduces the basic principles and requirements for radiation protection from medical irradiation, taking into consideration Directive 84/466/EURATOM for health protection from the damaging influence of ionizing radiation from medical irradiation.

Name:	**Security**	
Title or Name:	Regulation for the provision of physical protection of nuclear facilities, nuclear material and radioactive substances	
Reference Number:		
Date Promulgated or Proclaimed:	2004-08-25	Regulation

Comment **# 9706: Matters arranged by the Regulation Security**

In the Regulation, according to the Safe use of nuclear energy Act and the convention for physical protection of nuclear material, the matters related to physical protection of nuclear facilities, and during use, storage and transportation of nuclear materials and radioactive substances are defined.
The provisions of the Regulation take into consideration the specifics of the different kinds of nuclear facilities, nuclear materials and radioactive substances, which demand different levels of physical protection, depending on the category of nuclear materials and radioactive substances and the degree of risk.

Name:	**Funding**	
Title or Name:	Regulation for the procedure for assessment, collection, spending and control of the financial resources and definition of the amount of contributions due on the ?Radioactive waste? Fund	
Reference Number:		
Date Promulgated or Proclaimed:	2003-12-17	Regulation

Comment **# 9707: Matters arranged by the Regulation Funding**

The regulation determines the procedure for assessment, collection, spending and control of the financial resources and definition of the amount of contributions due on the ?Radioactive waste? Fund under auspices of the Minister of Energy and Energy Resources. The Fund is managed in a manner to assure implementation of the activities for radioactive waste management. The revenues of the Fund are collected mainly from contributions from legal and physical entities, which generate radioactive waste, due for transfer to the state enterprise ?Radioactive waste?, as a result of their activities as well as from national budget resources, allocated annually pursuant to the National Budget Act for the relevant year.

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Country: BULGARIA Reporting Year: 2010

Name:	**Notifictn**	
Title or Name:	Regulation of the conditions and procedure for notification of the NRA about events in nuclear facilities and sites with sources of ionizing radiation	
Reference Number:		
Date Promulgated or Proclaimed:	2004-07-30	Regulation

Comment **# 9708: Matters arranged by the Regulation Notifictn**

The regulation defines the obligations of the licensee or the holder of a permit for creation of a system for collecting, registration, investigation, analysis and evaluation of events and determination of corrective measures.
Also defined are the requirements for usage of the information about events, including for analysis of the operational experience, determining of the importance of the events for safety, as well as the procedure and terms for providing information to the citizens for events of different importance.

Name:	**Safe Use**	
Title or Name:	Act on the Safe Use of Nuclear Energy	
Reference Number:	Amended, SG No 80/2010	
Date Promulgated or Proclaimed:	2010-08-01	Law

Attachment **#2141: Regulation**

zbiae-2010-en.pdf

Nuclear Law in Bulgaria concerning the Safe Use of Nuclear Energy

Name:	**Decomm**	
Title or Name:	Regulation on Safety during Decommissioning of Nuclear Facilities	
Reference Number:		
Date Promulgated or Proclaimed:	2004-08-20	Regulation

Attachment **#2142: Regulation**

reg-decnf-en.pdf

Bulgarian Regulation on Safety during Decommissioning of Nuclear Facilities

Name:	**Transport**	
Title or Name:	Regulation on the Conditions and Procedure of Transport of Radioactive Material	
Reference Number:		
Date Promulgated or Proclaimed:	2005-07-22	Regulation

Attachment **#2143: Regulation**

reg-transport.pdf

Bulgarian Regulation on the Conditions and Procedure of Transport of Radioactive Material

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Regulations / Laws

Country: BULGARIA Reporting Year: 2010

Name:	**DeliveryRW**	
Title or Name:	Regulation on the Terms and Procedure for Delivery of Radioactive Waste to the Radioactive Waste State-Owned Company	
Reference Number:		
Date Promulgated or Proclaimed:	2004-07-23	Regulation

Attachment **#2144: Regulation**

reg-stentraw-en.pdf

Bulgarian Regulation on the Terms and Procedure for Delivery of Radioactive Waste to the Radioactive Waste State-Owned Company

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Milestones

Country: BULGARIA Reporting Year: 2010

Start Year or Reference Year:	2011	End Year:	2019
Description of Milestone:			
Operating license issued for the waste management facility on the Novi Han site. The offcial name is Special Division "PHRAO Novi han" a part of the State Enterprise "Radioactive Waste" (SERAW).			

Start Year or Reference Year:	2011	End Year:	2019
Description of Milestone:			
Operating license issued for Hot chamber (Hot cell) on the side of Special Division "PHRAO Novi han" also for 8 years : 2011-2019 The Hot Cell is used for sources of ionizing radiation, for purpose of technical service, assembly and disassembly of sources of ionizing radiation. The maximun capacity of the hot cell is 500 TBq.			

Start Year or Reference Year:	2008	End Year:	2015
Description of Milestone:			
Operating license issued for the waste management facility on Kozloduy site. Licensee - State Eneterprise "Radioactive Waste" (SERAW).			

Start Year or Reference Year:	2008	End Year:	2011
Description of Milestone:			
License for operation in condition "E" of units 1 and 2 - preparation for decommissioning			

Start Year or Reference Year:	2008	End Year:	
Description of Milestone:			
IRRT-2000 - Research Reactor - Spent Fuel removed and transported to Russia			

Start Year or Reference Year:	2007	End Year:	
Description of Milestone:			
Final Shut Down of the Units 3 and 4 of NPP "Kozloduy" - License for operation in condition "E" - activities for preparation for decommissioning			

Start Year or Reference Year:	2006	End Year:	
Description of Milestone:			
Operating license issued for the waste storage facility on Novi han site. Licensee - State Eneterprise "Radioactive Waste" (SERAW).			

Start Year or Reference Year:	2006	End Year:	2011
Description of Milestone:			
Special Division "PRRAW-Novi Han" - License for operation			

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Milestones

Country: BULGARIA Reporting Year: 2010

Start Year or Reference Year:	2006	End Year:	2010
Description of Milestone:			
National Repository for Disposal of Low and Intermediate Level of Radioactive Waste - Permit for Site Selection Procedure			

Start Year or Reference Year:	2004	End Year:	
Description of Milestone:			
Adoption of governmental Strategy for management of spent fuel and radioactive waste			

Start Year or Reference Year:	2004	End Year:	
Description of Milestone:			
Establishment and start of operations of the State Enterprise "Radioactive Waste" responsible for the off-site management of radioactive waste at national level.			

Start Year or Reference Year:	2003	End Year:	2005
Description of Milestone:			
Test operation of waste processing plant on Kozloduy NPP site			

Start Year or Reference Year:	2002	End Year:	
Description of Milestone:			
Final shut-down of Units 1 and 2 of Kozloduy NPP for decommissioning			

Start Year or Reference Year:	2002	End Year:	2003
Description of Milestone:			
Implementation of commissioning programme of waste processing plant on Kozloduy NPP site			

Start Year or Reference Year:	1999	End Year:	
Description of Milestone:			
Future investigations for disposal site selection for LILW from Kozlody NPP operation finalized. One site recommended as most perspective			

Start Year or Reference Year:	1997	End Year:	
Description of Milestone:			
Program for upgrading the Novi Han repository started, financed by the operator, the regulator and the state budget, with the support of IAEA TC Project BUL/4/005 "Increasing Safety of Novi Han Repository"			

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Milestones

Country: BULGARIA Reporting Year: 2010

Start Year or Reference Year:	1996	End Year:	1997
Description of Milestone:			
Implementation of big international project "Radioactive waste management in Bulgaria"			

Start Year or Reference Year:	1994	End Year:	
Description of Milestone:			
Operation of Novi Han repository suspended by the regulator with prescription for improvements			

Start Year or Reference Year:	1991	End Year:	1994
Description of Milestone:			
Research for selection of perspective sites for disposal of radioactive waste conducted. As a result 7 sites are determined and criteria for final site selection elaborated. Results are compiled in "Conception for National Repository for Radioactive Waste"			

Start Year or Reference Year:	1974	End Year:	
Description of Milestone:			
Commissioning of Kozloduy NPP unit 1 (VVER-440, model 230), followed by unit 2 (VVER-440/230) in 1975, unit 3 (VVER-440/230) in 1980, unit 4 (VVER-440/230) in 1982, unit 5 (VVER-1000/320) in 1987 and unit 6 (VVER-1000/320) in 1989			

Start Year or Reference Year:	1964	End Year:	
Description of Milestone:			
Commissioning of Novi Han reporsitory for LILW from the operation of IRRT-2000 research reactor and from the isotope applications			

Start Year or Reference Year:	1961	End Year:	
Description of Milestone:			
Commissioning of IRRT-2000 research reactor, located in Sofia and operated by the Bulgarian Academy of Science			

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Policies

Country: BULGARIA Reporting Year: 2010

National Systems

Policy		(Yes;Partially;No)
Q14	Has your Country implemented a national policy for radioactive waste management?	Yes

Attachment **#830: Questionaire**

Policy.doc

National policy for radwaste management

Strategies		(Yes;Partially;No)
Q15	Has your country developed strategies to implement a national policy?	Yes

Comment **# 7259: Strategy**

Council of Ministers (the government) issued in 1999 first National Strategy for Management of Spent Fuel and for Management of Radioactive Waste. Major producers of radwaste e.g. Kozloduy NPP have their own strategic plans being in line with the National Strategy. In 2004 the government adopted new strategy for management of radioactive waste spent fuel.

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	Yes
Q22	taken into account interdependencies among all steps in radioactive waste generation and management	Partially
Q23	implemented appropriate research and development to support the operational and regulatory needs	Partially
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	Yes

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Policies

Country: BULGARIA Reporting Year: 2010

	Responsibilities	(Complete;Incomplete)
	Member State Responsibility	
Q28	establish and implement a legal framework for the management of radioactive waste	Incomplete
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	Incomplete
	Regulatory Body Responsibility	
Q33	enforce compliance with regulatory requirements	Complete
Q34	implement the licensing process	Complete
Q35	advise the government	Complete
	Waste Generator and Operators of Waste Management Facilities Responsibility	
Q37	identify an acceptable destination for the radioactive waste	Incomplete
Q114	comply with legal requirements	Complete

	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	Partially
Q46	establish and implement a quality assurance programme for the radioactive waste generated or its processing, storage and disposal	Partially
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	Partially
Q50	conduct or otherwise ensure appropriate research and development to support operational needs in radioactive waste management	Partially

	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)?	No

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Policies

Country: BULGARIA Reporting Year: 2010

Disposal Facilities

	Licensing	(Yes - All;Yes - Some;No)
	If any of the following are part of your disposal policy, indicate Yes - All if they apply to all facilities, indicate Yes - Some if the apply to only some of the facilities or indicate No if they are not part of your policy at all.	
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 - Some

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

Comment **# 9709: Waste acceptance criteria for disposal**

Even though the answer to the question is "Yes-all" the following shall be taken into account:
1. Currently there is no waste disposal facility in operation in the country;
2. When Novi Han facility was operated (1960's - 1994) it had WAC which was not as detailed as required today.

	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?	Yes
Q62	If the answer to the previous question was YES, does your Country have any policies, laws or regulations that prescribe what records are to be maintained?	No
Q63	Does your Country have any written policies to address active institutional controls or passive institutional controls, such as monitoring or access restrictions?	Yes
	If the use of active institutional controls is part of your Country's written policies, please indicate which of the following practices are either implemented or are being considered.	
Q65	access restrictions	Yes
Q66	drainage and/or leachate collection system(s)	No
Q67	leachate treatment systems	No
Q68	environmental monitoring	Yes
Q69	facility monitoring	Yes
Q70	surveillance	Yes
Q71	plans for intervention measures during active institutional control if there is an unplanned release of radioactive materials from the disposal facility	Yes

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Policies

Country: BULGARIA Reporting Year: 2010

Processing/Storage

	Policies/Procedures	(Yes;No)
	Does your country have written policies or written procedures for the following:	
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)	Yes
Q78	Does your country have any legislation, regulation, or policy that waste processing must take place prior to storage (see following note)	Yes

	Implementation	(Yes;No)
Q80	In your Country are there any waste processing facilities at the same location where the waste is generated?	Yes
Q81	In your Country are there any centralized waste processing facilities?	No
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)?	Yes
Q122	Will some or all of the product(s) of processing/reprocessing be returned to your country?	Yes
Q123	Currently, are any of your country?s wastes (processed or unprocessed, including the products of reprocessing) or spent fuel being stored in another country?	Yes
Q124	Has your country accepted any wastes or spent fuel from another country for processing (reprocessing for fuel)?	No

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Policies

Country: BULGARIA 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?	No
Q87	Are there regional-level registries (one or more)?	No
Q90	Are there local-level registries (one or more)?	No

	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

	Agreements	(Yes;No)
	Does your Country have any agreements in place whereby spent sealed radioactive sources (SRS) are returned to their supplier by the user (check all options that apply)?	
Q93	Government to Government agreements	No
Q94	Government - Supplier agreements	No
Q95	Supplier-User agreements	No
Q97	Do any agreements include suppliers that are outside of your Country?	No

	Release / Disposal	(Yes;No)
Q99	Does your Country have any regulations to free-release spent sealed radioactive sources (SRS)?	No
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?	Yes
Q102	Has your Country implemented dedicated disposal facilities for spent SRS?	Yes
Q103	Does your Country have plans to implement dedicated disposal facilities for spent SRS?	Yes

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Policies

Country: BULGARIA 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

	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

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

	Facilities	(Yes;No)
Q119	Does Your Country have any nuclear fuel cycle facilities?	Yes
Q120	Does Your Country have any nuclear applications facilities (non fuel cycle facilities)?	Yes

	Timeframe	(Yes - All;Yes - Some;No)
Q112	Does your Country require a time frame for the decommissioning of nuclear fuel cycle facilities once these facilities cease operation?	No
Q113	Does your Country require a time frame for the decommissioning of non-nuclear fuel cycle facilities once these facilities cease operation?	No

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National Inventory by Waste Class

Country: BULGARIA Reporting Year: 2010

No data available.

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