



**Country Waste Profile Report for  
CZECH REPUBLIC  
Reporting Year: 2007**

*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*

## Waste Classification Schemes

Country: CZECH REPUBLIC

Reporting Year: 2007

Waste Class Matrix: **IAEA Def.**

This country does use the IAEA Scheme: No

Description: The Agency's standard matrix

Waste Class Name	Distribution %		
	LILW-SL	LILW-LL	HLW
LILW-SL	100.0	0.0	0.0
LILW-LL	0.0	100.0	0.0
HLW	0.0	0.0	100.0

Waste Class Matrix: **cz-eu**

Yes

Description: TRW - >Temporary waste, whose activity after 5 years storage does not exceed the clearance levels.  
 LILW-SL > Low and intermediate-level waste-short-lived contains radionuclides with half-life shorter than 30 years and with a maximal mass activity of long-lived alpha emitters of 4 kBq/g  
 LILW-LL -> Low and intermediate-level waste long-lived exceeds limits for LILW-SL  
 HLW-> High-level waste waste for which heat generation from radionuclide decay must be taken into account

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

Comment **# 7186: Waste classification**

Solid radioactive waste shall be classified into three basic categories, namely temporary, low-level and intermediate-level, and high-level wastes.

Temporary radioactive waste shall be such waste whose radioactivity after long-term storage (maximum 5 years) does not exceed the clearance levels.

High-level radioactive waste shall be waste for which heat generation from radionuclide decay of the radionuclides contained must be taken into account during its storage and disposal.

Other radioactive waste shall be classified as low and intermediate-level waste. Low and intermediate-level waste is classified into two subcategories. The first subcategory is short-lived waste, in which the half-life of radionuclides contained is shorter than 30 years (including Cs-137) with a limited mass activity of long-lived alpha emitters (in individual packages a maximum of 4000 kBq/kg, and a mean value of 400 kBq/kg in the total volume of waste produced in a calendar year). The other subcategory is long-lived waste, that is waste not ranking in the short-lived radioactive waste subcategory.

**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
Unprocessed means:	x			
Processed means:		x	x	x

## Groups Overview

Country: CZECH REPUBLIC

Reporting Year: 2007

<b>Reporting Group:</b>	<b>Institutes</b>			
Inventory Reporting Date:	December 2007			
Waste Matrix Used:	cz-eu			
Description:	Research institutes, radiochemical laboratories, industrial facilities etc.			
Site Name	Facility Name	Facilities Defined		
Chemcomex	Hall I.	processing		
ISOTREND	Hall	processing		
UJP Praha	Hall I	processing		
	RAW store		storage	
UJV Rez	Cerv.skala		storage	
	Prekladist		storage	
	Sklad VAO		storage	
	VZ	processing	storage	
VF	TC	processing	storage	
	UJP	processing	storage	
ZAM-SERVIS	SRS	processing		
Comment # 7078: Additional information predisposal radioactive waste management, electrical and electronical devices installation and maintenance				

<b>Reporting Group:</b>	<b>NPPs</b>			
Inventory Reporting Date:	December 2007			
Waste Matrix Used:	cz-eu			
Description:	Nuclear power plants			
Site Name	Facility Name	Facilities Defined		
EDU	BAPP	processing	storage	
	SVO	processing		
	ZRAO	processing		
ETE	BPP	processing	storage	

## Groups Overview

Country: CZECH REPUBLIC

Reporting Year: 2007

<b>Reporting Group:</b>	<b>SURAO</b>
Inventory Reporting Date:	December 2007
Waste Matrix Used:	CZ-EU
Description:	Radioactive Waste Repository Authority

Site Name	Facility Name	Facilities Defined	
Bratrstvi	URAO B		disposal
Dukovany	URAO D		disposal
Hostim	URAO H		disposal
Richard	URAO R	storage	disposal

**Comment # 359: Status and activities of SURAO**

To provide for activities associated with radioactive waste disposal, the Ministry of Industry and Trade set up a Radioactive Waste Repositories Authority (hereinafter referred to as "SURAO") as a State organisation. The Authority shall carry out particular activities in radioactive waste management based on a licence under Atomic Act (Act No. 18/1997).

The SURAO shall engage in the following activities

- a) preparation, construction, commissioning, operation and closure of radioactive waste repositories and monitoring of their impact on the environment;
- b) radioactive waste management;
- c) conditioning of spent or irradiated nuclear fuel into a form suitable for its disposal or further utilisation;
- d) keeping records of radioactive waste receipts and their generators;
- e) administration of payments to the nuclear account;
- f) drafting of proposals for determination of payments to the nuclear account;
- g) provision for and co-ordination of research and development in the field of radioactive waste management;
- h) monitoring of reserves of licensees for decommissioning of their installations;
- i) provision of services in the field of radioactive waste management;
- j) management of radioactive waste transported to the territory of the Czech Republic from abroad when it is not possible to return it;
- k) provision of temporary administration in the case of radioactive waste that, under a specific Act, has become State property; if these are items that were found, left or hidden, the Authority is entitled also to accept them, instead of a State body determined by a specific Act.

## Site (Structure) : Chemcomex

Country: CZECH REPUBLIC

Reporting Year: 2007

Full Name: Chemcomex Praha, a. s.

Location: Pražská 810/16  
CZ-102 21 Praha 10

Description:

Official Website:

License Holder(s): Chemcomex Praha, a. s.

Comment # 14564: Site Chemcomex

The licensee performs according to the valid SUJB license collection, segregation, treatment, conditioning and storage of radioactive waste containing uranium.

Waste management facilities that are located at this site:

<b>Facility:</b>	<b>Hall I.</b>	
<b>Description:</b>	Waste management and storage facility at UJP Praha a. s. site	
<b>Processing part of facility</b>		
The following shows processing status for waste classes and SRS.		
<b>Waste Class</b>	<b>Actual</b>	<b>Planned</b>
TRW	No	No
LILW-SL	No	No
LILW-LL	No	No
HLW	No	No
<b>Type:</b>		
<b>Year opened:</b>		

**Site (Data) : Chemcomex**

Stock of waste as at December 2007

Country: CZECH REPUBLIC

Reporting Year: 2007

**Site Name: Chemcomex**

Full Name: Chemcomex Praha, a. s.

Inventory Reporting Date: December 2007

Waste Matrix Used: cz-eu

Comment **# 14564: Site Chemcomex**

The licensee performs according to the valid SUJB license collection, segregation, treatment, conditioning and storage of radioactive waste containing uranium.

**No Waste Data to report.**

## Site (Structure) : ISOTREND

Country: CZECH REPUBLIC

Reporting Year: 2007

Full Name: ISOTREND s.r.o.

Location: Radiova 1  
CZ-102 27 Praha 10 - Hostivar

Description:

Official Website:

License Holder(s): ISOTREND s.r.o.

Comment **# 395: Activity**

Assembly, checks, maintenance and distribution of radionuclide sources, predisposal operation in radioactive waste management

Waste management facilities that are located at this site:

<b>Facility:</b>	<b>Hall</b>
<b>Description:</b>	Waste treatment and conditioning facility

**Processing part of facility Hall**

The following shows processing status for waste classes and SRS.

Waste Class	Actual	Planned
TRW	No	No
LILW-SL	No	No
LILW-LL	No	No
HLW	No	No

<b>Type:</b>	Treatment, Conditioning
<b>Year opened:</b>	1981

Comment **# 14563: Processing Facility Hall**

The facility is in operation since 1981 (Institute for Research, Production and Utilisation of Radioisotopes) and from 1992 is a part of newly established Isotrend company.

**Site (Data) : ISOTREND**

Stock of waste as at December 2007

Country: CZECH REPUBLIC

Reporting Year: 2007

**Site Name: ISOTREND**

Full Name: ISOTREND s.r.o.

Inventory Reporting Date: December 2007

Waste Matrix Used: cz-eu

Comment **# 395: Activity**

Assembly, checks, maintenance and distribution of radionuclide sources, predisposal operation in radioactive waste management

**Processing - Treatment method(s)**

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

**Processing - Conditioning method(s)**

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



## Site (Structure) : UJP Praha

Country: CZECH REPUBLIC

Reporting Year: 2007

Full Name: UJP Praha a. s.

Location: Nad Kaminkou 1345  
CZ-156 10 Praha - Zbraslav

Description:

Official Website:

License Holder(s): UJP Praha a. s.

Waste management facilities that are located at this site:

<b>Facility:</b>	<b>Hall I</b>																
<b>Description:</b>	Waste management equipment is placed in Hall I.																
<p><b>Processing part of facility                      Hall I</b></p> <p>The following shows processing status for waste classes and SRS.</p> <table border="1"> <thead> <tr> <th>Waste Class</th> <th>Actual</th> <th>Planned</th> </tr> </thead> <tbody> <tr> <td>TRW</td> <td>No</td> <td>No</td> </tr> <tr> <td>LILW-SL</td> <td>Yes</td> <td>Yes</td> </tr> <tr> <td>LILW-LL</td> <td>Yes</td> <td>Yes</td> </tr> <tr> <td>HLW</td> <td>No</td> <td>No</td> </tr> </tbody> </table>			Waste Class	Actual	Planned	TRW	No	No	LILW-SL	Yes	Yes	LILW-LL	Yes	Yes	HLW	No	No
Waste Class	Actual	Planned															
TRW	No	No															
LILW-SL	Yes	Yes															
LILW-LL	Yes	Yes															
HLW	No	No															
<b>Type:</b>	Conditioning																
<b>Year opened:</b>	1973																
<b>Comment</b>	<b># 14558: Processing Facility Hall I</b>																
	The licensee performs according to the valid SUJB license collection, segregation, conditioning and storage of waste.																

## Site (Structure) : UJP Praha

Country: CZECH REPUBLIC

Reporting Year: 2007

<b>Facility:</b>	<b>RAW store</b>					
<b>Description:</b>	Storage facility for the temporary storage of waste before handling over to disposal (SURAO)					
<b>Storage part of facility</b>			<b>RAW store</b>			
The following shows storage status for waste classes and SRS.						
<b>Waste Class</b>	<b>Actual</b>	<b>Planned</b>				
TRW	No	No				
LILW-SL	No	No				
LILW-LL	Yes	Yes				
HLW	No	No				
<b>List SRS?</b>	No					
<b>List UMMT?</b>	No					
<b>Capacity:</b>						
<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>
RAW store	building	1966	No	No	No	No

**Site (Data) : UJP Praha**

Stock of waste as at December 2007

Country: CZECH REPUBLIC

Reporting Year: 2007

**Site Name: UJP Praha**

Full Name: UJP Praha a. s.

Inventory Reporting Date: December 2007

Waste Matrix Used: cz-eu

**Processing - Conditioning method(s)**

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

Comment **# 14562: Waste conditioning on Site UJP Praha**

Waste is collected in 100 l drums which are then placed into 200 l drums backfilled with concrete. There is a surface isolation layer on the top of the concrete matrix.

## Site (Structure) : UJV Rez

Country: CZECH REPUBLIC

Reporting Year: 2007

Full Name: UJV Rez a.s.  
(Nuclear Research Institute Rez)

Location: CZ-250 68 Rez

Description:

Official Website:

License Holder(s): UJV Rez a.s.  
CZ-250 68 Rez

Waste management facilities that are located at this site:

<b>Facility:</b>	<b>Cerv.skala</b>
<b>Description:</b>	Waste storage facility (Cervena Skala - Red Rock)

**Storage part of facility Cerv.skala**

The following shows storage status for waste classes and SRS.

Waste Class	Actual	Planned
TRW	No	No
LILW-SL	Yes	Yes
LILW-LL	No	No
HLW	No	No

List SRS?	No
List UMMT?	No

**Capacity:** Storage facility can accommodate max. 6 ISO containers with RAW and 100 m3 of solid RAW (technological parts). Total activity - max. 10 GBq.

**Types of Storage Units**

Storage Unit Name	Type Name	Year Opened	Closed?	Full?	Modular?	Contains SRS?
Cerv.skala	container (ISO)	1988	No	Yes	No	No
Cerv.skala	concrete pad	1988	No	Yes	No	No

## Site (Structure) : UJV Rez

Country: CZECH REPUBLIC

Reporting Year: 2007

<b>Facility:</b>	<b>Prekladist</b>					
<b>Description:</b>	Waste storage facility (Prekladiste - Reloading facility)					
<b>Storage part of facility</b>		<b>Prekladist</b>				
The following shows storage status for waste classes and SRS.						
<b>Waste Class</b>	<b>Actual</b>	<b>Planned</b>				
TRW	No	No				
LILW-SL	Yes	Yes				
LILW-LL	Yes	Yes				
HLW	No	No				
<b>List SRS?</b>	No					
<b>List UMMT?</b>	No					
<b>Capacity:</b>	Unprocessed waste - max. 800 m3 and 1500 GBq Processed waste - max. 600 m3					
<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>
Prekladist	building	1963	No	No	No	Yes

## Site (Structure) : UJV Rez

Country: CZECH REPUBLIC

Reporting Year: 2007

<b>Facility:</b>	<b>Sklad VAO</b>
<b>Description:</b>	HLW store (Sklad VAO) - facility for storage of spent fuel and LILW with activity exceeding WAC for operating repositories

**Storage part of facility****Sklad VAO**

The following shows storage status for waste classes and SRS.

Waste Class	Actual	Planned
TRW	No	No
LILW-SL	Yes	Yes
LILW-LL	Yes	Yes
HLW	No	Yes

<b>List SRS?</b>	No
<b>List UMMT?</b>	No

<b>Capacity:</b>	
------------------	--

## Types of Storage Units

Storage Unit Name	Type Name	Year Opened	Closed?	Full?	Modular?	Contains SRS?
Sklad VAO	building	1995	No	No	Yes	Yes

## Site (Structure) : UJV Rez

Country: CZECH REPUBLIC

Reporting Year: 2007

<b>Facility:</b>	<b>VZ</b>
<b>Description:</b>	Velke Zbytky: Waste storage, treatment and conditioning plant

**Storage part of facility VZ**

The following shows storage status for waste classes and SRS.

Waste Class	Actual	Planned
TRW	Yes	No
LILW-SL	Yes	Yes
LILW-LL	Yes	No
HLW	No	No

<b>List SRS?</b>	No
<b>List UMMT?</b>	No

<b>Capacity:</b>	Solid unprocessed RAW (LILW-LL, LILW-SL): 23 m <sup>3</sup> ; TRW: 160 m <sup>3</sup> ; Conditioned RAW (LILW-LL, LILW-SL, SRS): 130 pc. of 200/216 L drums (26 m <sup>3</sup> ); Liquid RAW (storage tanks): 143 m <sup>3</sup> ; SRS: Sum activity limitation - Liquid RAW (storage containers): 3 m <sup>3</sup>
------------------	--

## Types of Storage Units

Storage Unit Name	Type Name	Year Opened	Closed?	Full?	Modular?	Contains SRS?
No. 1,2...	tank (stainless steel)	1962	No	No	No	No
St. rooms	building	1962	No	No	No	Yes
No. 29, 30	tank (stainless steel)	1962	No	No	No	No

**Processing part of facility VZ**

The following shows processing status for waste classes and SRS.

Waste Class	Actual	Planned
TRW	Yes	Yes
LILW-SL	Yes	Yes
LILW-LL	Yes	Yes
HLW	No	No

<b>Type:</b>	Treatment, Conditioning
<b>Year opened:</b>	1962

## Site (Data) : UJV Rez

Stock of waste as at December 2007

Country: CZECH REPUBLIC

Reporting Year: 2007

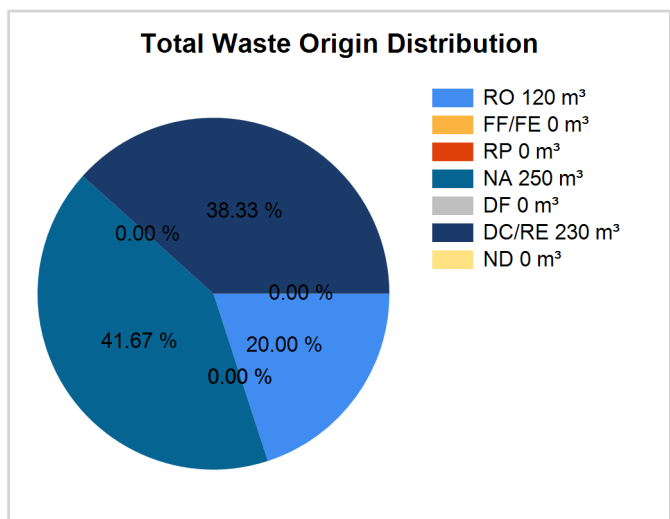
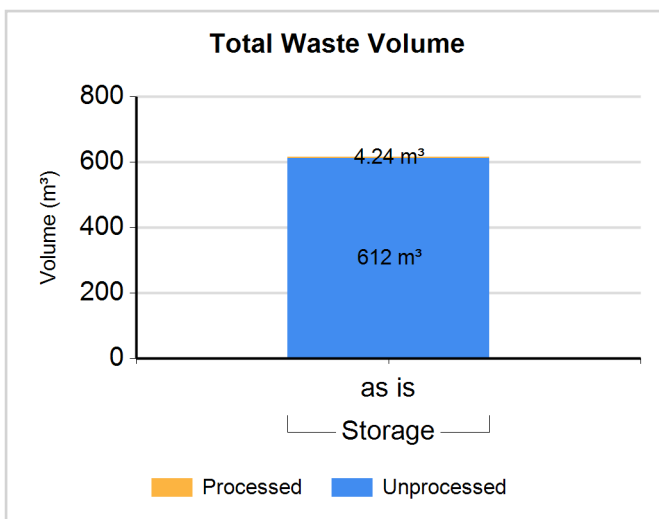
**Site Name:** UJV RezFull Name: UJV Rez a.s.  
(Nuclear Research Institute Rez)

Inventory Reporting Date: December 2007

Waste Matrix Used: cz-eu

**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: TRW**

Waste Class Name	Location / Facility	Proc	Est.	Volume "as is" (m³)	Volume "as dispo" (m³)	RO %	FF/FE %	RP %	NA %	DF %	DC/RE %	ND %
TRW	Storage / VZ	N	Y	37.000	37.000	0.00	0.00	0.00	100.00	0.00	0.00	0.00

**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 (solid)	Storage / Cerv.skala	N	Y	78.000	78.000	0.00	0.00	0.00	0.00	0.00	100.00	0.00
LILW-SL (solid)	Storage / Prekladist	N	Y	379.000	379.000	30.00	0.00	0.00	30.00	0.00	40.00	0.00
LILW-SL (solid)	Storage / Prekladist	Y	Y	3.240	3.240	30.00	0.00	0.00	40.00	0.00	30.00	0.00
LILW-SL (liquid)	Storage / VZ	N	Y	118.000	118.000	30.00	0.00	0.00	40.00	0.00	30.00	0.00
LILW-SL (solid)	Storage / VZ	Y	Y	1.000	1.000	30.00	0.00	0.00	40.00	0.00	30.00	0.00

Comment # 17423: Waste Storage facilities/Class LILW-SL/Site UJV Re

Information on the stored inventory of unprocessed LILW-SL in VZ facility covers both liquid and solid waste.



## Site (Data) : UJV Rez

Stock of waste as at December 2007

Country: CZECH REPUBLIC

Reporting Year: 2007

**Processing - Treatment method(s)**

Method	Status			
	Planned	R&D program	Current practice method use over the last 5 years	Past Practice
Calcination	N	Y		N
Decontamination	N	Y	Same	N
Evaporation	N	N	Same	N
Radionuclide Separation	N	Y		N
Shredding and Compaction	N	N	Same	N
Solvent Extraction	N	Y		N

**Processing - Conditioning method(s)**

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

## Site (Structure) : VF

Country: CZECH REPUBLIC

Reporting Year: 2007

Full Name: VF, a. s.

Location: nam. Miru 50  
CZ-679 21 Cerna Hora

Description:

Official Website:

License Holder(s): VF, a. s.

Waste management facilities that are located at this site:

<b>Facility:</b>	<b>TC</b>
<b>Description:</b>	Technological centre VF, a.s., Svitavská 588, Cerná Hora

**Storage part of facility TC**

The following shows storage status for waste classes and SRS.

Waste Class	Actual	Planned
TRW	No	No
LILW-SL	No	No
LILW-LL	No	No
HLW	No	No

<b>List SRS?</b>	No
<b>List UMMT?</b>	No

<b>Capacity:</b>	Storage facility for the temporary storage of SRS and LILW-LL before handling over to disposal (SURAO).
------------------	---

## Types of Storage Units

Storage Unit Name	Type Name	Year Opened	Closed?	Full?	Modular?	Contains SRS?
Store	building	1992	No	No	No	Yes

## Site (Structure) : VF

Country: CZECH REPUBLIC

Reporting Year: 2007

**Processing part of facility TC**

The following shows processing status for waste classes and SRS.

Waste Class	Actual	Planned
TRW	No	No
LILW-SL	No	No
LILW-LL	Yes	No
HLW	No	No

Type:	Treatment, Conditioning
Year opened:	2006

## Site (Structure) : VF

Country: CZECH REPUBLIC

Reporting Year: 2007

<b>Facility:</b>	<b>UJP</b>
Description:	Working place of III. category at UJP PRAHA a.s.

**Storage part of facility UJP**

The following shows storage status for waste classes and SRS.

Waste Class	Actual	Planned
TRW	No	No
LILW-SL	No	No
LILW-LL	No	No
HLW	No	No

List SRS?	No
List UMMT?	No

Capacity:	Storage facility for the temporary storage of SRS before handling over to disposal (SUJB)
-----------	---

## Types of Storage Units

Storage Unit Name	Type Name	Year Opened	Closed?	Full?	Modular?	Contains SRS?
Store	building	1992	No	No	No	No

**Processing part of facility UJP**

The following shows processing status for waste classes and SRS.

Waste Class	Actual	Planned
TRW	No	No
LILW-SL	No	No
LILW-LL	No	No
HLW	No	No

Type:	Treatment, Conditioning
Year opened:	2004

**Site (Data) : VF**

Stock of waste as at December 2007

Country: CZECH REPUBLIC

Reporting Year: 2007

**Site Name: VF**

Full Name: VF, a. s.

Inventory Reporting Date: December 2007

Waste Matrix Used: cz-eu

**Processing - Treatment method(s)**

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

Comment **# 14559: Waste Treatment on Site VF**

SRSs are removed from the encapsulation or equipment and then after decontamination are these structures treated as non-radioactive waste. SRSs are conditioned and after short technological storage handed over to SURAO and disposed.

**Processing - Conditioning method(s)**

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

Comment **# 14560: Waste conditioning on Site VF**

SRSs are placed into 200 l drums backfilled with concrete.

## Site (Structure) : ZAM-SERVIS

Country: CZECH REPUBLIC

Reporting Year: 2007

Full Name: ZAM-SERVIS s.r.o.

Location: Kristanova 1116/14  
CZ-702 00 Ostrava-Privoz

Description:

Official Website:

License Holder(s): ZAM-SERVIS s.r.o.

Comment # 7184: additional information

Electrical and electrical devices installation and maintenance works, predisposal radioactive waste management

Waste management facilities that are located at this site:

<b>Facility:</b>	<b>SRS</b>		
<b>Description:</b>			
<b>Processing part of facility SRS</b>			
The following shows processing status for waste classes and SRS.			
<b>Waste Class</b>	<b>Actual</b>	<b>Planned</b>	
TRW	No	No	
LILW-SL	Yes	Yes	
LILW-LL	Yes	Yes	
HLW	No	No	
<b>Type:</b>	Conditioning		
<b>Year opened:</b>	1997		

**Site (Data) : ZAM-SERVIS**

Stock of waste as at December 2007

Country: CZECH REPUBLIC

Reporting Year: 2007

**Site Name: ZAM-SERVIS**

Full Name: ZAM-SERVIS s.r.o.

Inventory Reporting Date: December 2007 Waste Matrix Used: cz-eu

Comment # 7184: additional information

Electrical and electronical devices installation and maintenance works, predisposal radioactive waste management

**Processing - Conditioning method(s)**

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

## Site (Structure) : EDU

Country: CZECH REPUBLIC

Reporting Year: 2007

Full Name: JE Dukovany

Location: CZ-675 50 Dukovany

Description:

Official Website:

License Holder(s): CEZ a.s

Comment # 391: NPP Dukovany

4 PWR of VVER-440-V213 type are installed. Total electrical output is 1760 MW. Physical startup of the 1 unit was in february 1985. Full commercial operation of all units started in January 1988.  
NPP is situated 35 km to the SW of the City of Brno.

Waste management facilities that are located at this site:

<b>Facility:</b>	<b>BAPP</b>
<b>Description:</b>	Auxiliary building containing waste processing and storage facilities

**Storage part of facility BAPP**

The following shows storage status for waste classes and SRS.

Waste Class	Actual	Planned
TRW	No	No
LILW-SL	Yes	Yes
LILW-LL	No	No
HLW	No	No

List SRS?	No
List UMMT?	No

Capacity:	
-----------	--

## Types of Storage Units

Storage Unit Name	Type Name	Year Opened	Closed?	Full?	Modular?	Contains SRS?
TW	tank (stainless steel)	1985	No	No	No	No
Box	bunker	1985	No	No	No	No
Mog	well	1985	No	No	No	No



## Site (Structure) : EDU

Country: CZECH REPUBLIC

Reporting Year: 2007

**Processing part of facility**      **BAPP**

The following shows processing status for waste classes and SRS.

Waste Class	Actual	Planned
TRW	No	No
LILW-SL	Yes	Yes
LILW-LL	No	No
HLW	No	No

Type:	Treatment
Year opened:	1985

## Site (Structure) : EDU

Country: CZECH REPUBLIC

Reporting Year: 2007

<b>Facility:</b>	<b>SVO</b>															
<b>Description:</b>	Liquid Waste Treatment Systems															
<b>Processing part of facility</b>	<b>SVO</b>															
The following shows processing status for waste classes and SRS.																
<table border="1"><thead><tr><th>Waste Class</th><th>Actual</th><th>Planned</th></tr></thead><tbody><tr><td>TRW</td><td>No</td><td>No</td></tr><tr><td>LILW-SL</td><td>Yes</td><td>Yes</td></tr><tr><td>LILW-LL</td><td>No</td><td>No</td></tr><tr><td>HLW</td><td>No</td><td>No</td></tr></tbody></table>	Waste Class	Actual	Planned	TRW	No	No	LILW-SL	Yes	Yes	LILW-LL	No	No	HLW	No	No	
Waste Class	Actual	Planned														
TRW	No	No														
LILW-SL	Yes	Yes														
LILW-LL	No	No														
HLW	No	No														
<b>Type:</b>	Treatment															
<b>Year opened:</b>	1985															

## Site (Structure) : EDU

Country: CZECH REPUBLIC

Reporting Year: 2007

<b>Facility:</b>	<b>ZRAO</b>															
<b>Description:</b>	Conditioning of Liquid Radioactive Waste by Solidification															
<b>Processing part of facility</b> <b>ZRAO</b>																
The following shows processing status for waste classes and SRS.																
<table border="1"><thead><tr><th>Waste Class</th><th>Actual</th><th>Planned</th></tr></thead><tbody><tr><td>TRW</td><td>No</td><td>No</td></tr><tr><td>LILW-SL</td><td>Yes</td><td>Yes</td></tr><tr><td>LILW-LL</td><td>No</td><td>No</td></tr><tr><td>HLW</td><td>No</td><td>No</td></tr></tbody></table>	Waste Class	Actual	Planned	TRW	No	No	LILW-SL	Yes	Yes	LILW-LL	No	No	HLW	No	No	
Waste Class	Actual	Planned														
TRW	No	No														
LILW-SL	Yes	Yes														
LILW-LL	No	No														
HLW	No	No														
<b>Type:</b>	Conditioning															
<b>Year opened:</b>	1994															

## Site (Data) : EDU

Stock of waste as at December 2007

Country: CZECH REPUBLIC

Reporting Year: 2007

**Site Name:** EDU

Full Name: JE Dukovany

Inventory Reporting Date: December 2007

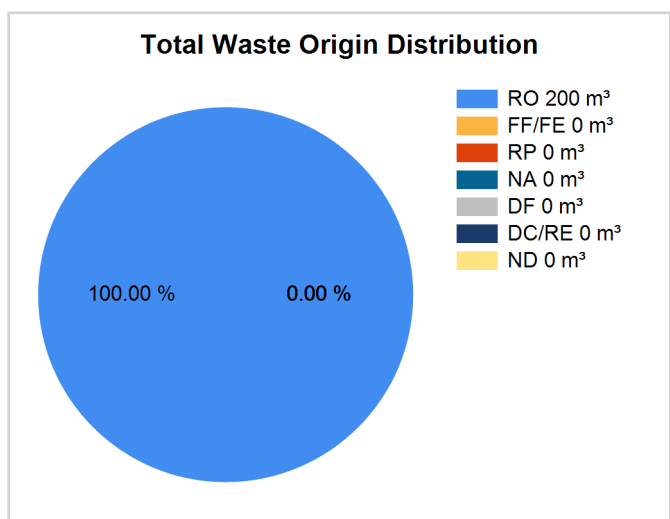
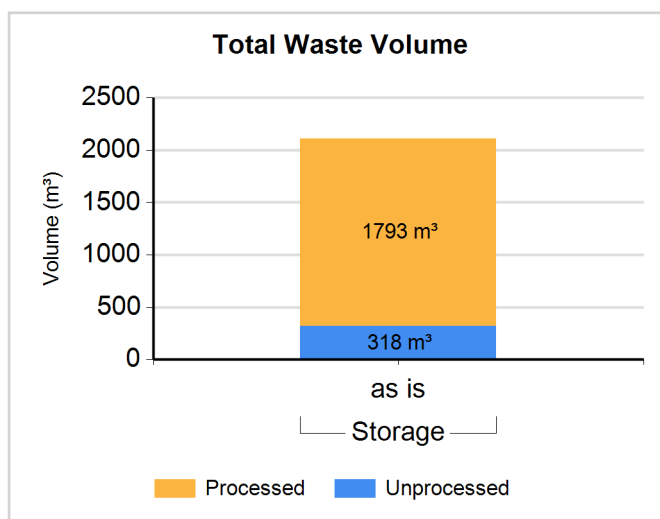
Waste Matrix Used: cz-eu

Comment # 391: NPP Dukovany

4 PWR of VVER-440-V213 type are installed. Total electrical output is 1760 MW. Physical startup of the 1 unit was in february 1985. Full commercial operation of all units started in January 1988. NPP is situated 35 km to the SW of the City of Brno.

**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	Storage / BAPP	N	N	318.000	318.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
LILW-SL	Storage / BAPP	Y	N	1793.000	1793.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00

Comment # 4958: The additional characteristics of the waste

Processed waste covers only radioactive concentrates and unprocessed waste only ion exchange resins. Additionally 502,4 t of solid waste was stored in NPP Dukovany in 2006 and 506,7 t in 2007.

**Processing - Treatment method(s)**

Method	Status			
	Planned	R&D program	Current practice method use over the last 5 years	Past Practice
Compaction	N	N	Same	N
Evaporation	N	N	Same	N
Ion Exchange	N	N	Same	N
Solvent Extraction	N	N	Increase	N

**Site (Data) : EDU**

Stock of waste as at December 2007

Country: CZECH REPUBLIC

Reporting Year: 2007

**Processing - Conditioning method(s)**

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

## Site (Structure) : ETE

Country: CZECH REPUBLIC

Reporting Year: 2007

Full Name: JE Temelin

Location: CZ-373 05 Temelin

Description:

Official Website:

License Holder(s): CEZ a.s.

Comment **# 390: NPP Temelin**

The Temelin NPP is the largest power station in the Czech Republic. 2 PWR reactors of the VVER-1000-320 type are installed with capacity of 2000 MW.

The NPP station is situated approximately 24 km north of the City of Ceske Budejovice.

The site preparation started in 1983. In 1990, the government of the CSFR decided to cease the construction on the 3rd and 4th units. Finally, in March 1993, the government of the CR decided that the 1st and 2nd VVER 1000 units should be completed only. However, the modifications and alterations further postponed the commissioning of the power station. Unit 1 was critical in October 2000. The trial operation of the Unit 1 started in July 2002. The Unit 2 was critical in May 2002. The trial operation of the Unit 2 started in April 2003.

Waste management facilities that are located at this site:

## Site (Structure) : ETE

Country: CZECH REPUBLIC

Reporting Year: 2007

<b>Facility:</b>	<b>BPP</b>
<b>Description:</b>	Waste processing and interim storage facility

**Storage part of facility                      BPP**

The following shows storage status for waste classes and SRS.

Waste Class	Actual	Planned
TRW	No	No
LILW-SL	Yes	Yes
LILW-LL	No	No
HLW	No	No

<b>List SRS?</b>	No
<b>List UMMT?</b>	No

<b>Capacity:</b>	
------------------	--

## Types of Storage Units

Storage Unit Name	Type Name	Year Opened	Closed?	Full?	Modular?	Contains SRS?
box	bunker	2000	No	No	No	No
kobka	well	2000	No	No	No	No

**Processing part of facility                      BPP**

The following shows processing status for waste classes and SRS.

Waste Class	Actual	Planned
TRW	No	No
LILW-SL	Yes	Yes
LILW-LL	No	No
HLW	No	No

<b>Type:</b>	Treatment, Conditioning
<b>Year opened:</b>	2000

## Site (Data) : ETE

Stock of waste as at December 2007

Country: CZECH REPUBLIC

Reporting Year: 2007

**Site Name:** ETE

Full Name: JE Temelin

Inventory Reporting Date: December 2007

Waste Matrix Used: cz-eu

Comment # 390: NPP Temelin

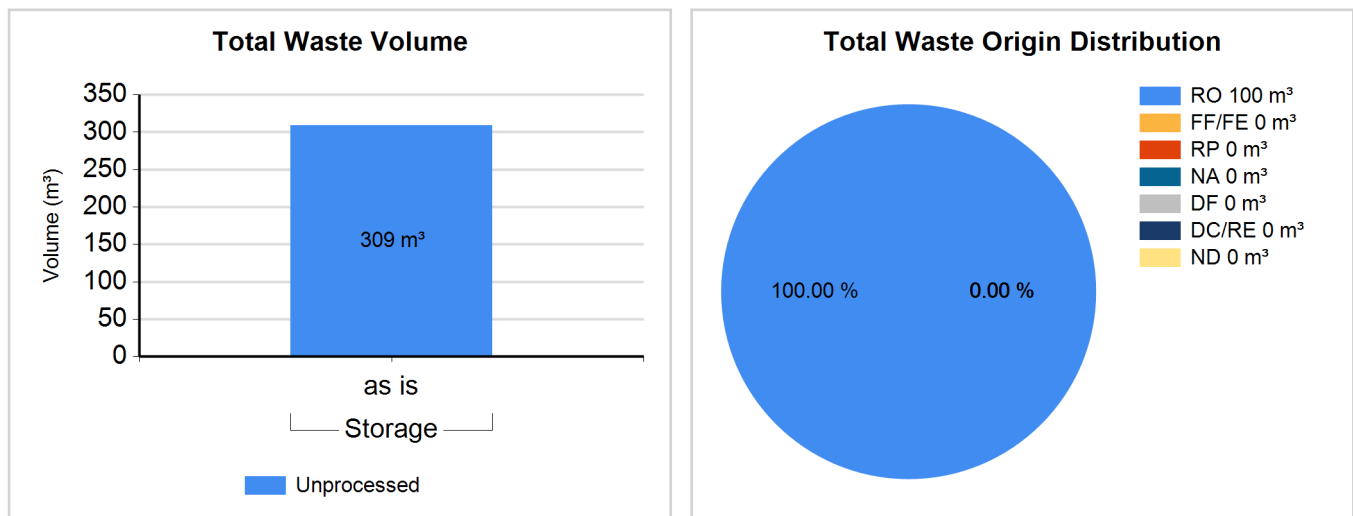
The Temelín NPP is the largest power station in the Czech Republic. 2 PWR reactors of the VVER-1000-320 type are installed with capacity of 2000 MW.

The NPP station is situated approximately 24 km north of the City of Ceske Budejovice.

The site preparation started in 1983. In 1990, the government of the CSFR decided to cease the construction on the 3rd and 4th units. Finally, in March 1993, the government of the CR decided that the 1st and 2nd VVER 1000 units should be completed only. However, the modifications and alterations further postponed the commissioning of the power station. Unit 1 was critical in October 2000. The trial operation of the Unit 1 started in July 2002. The Unit 2 was critical in May 2002. The trial operation of the Unit 2 started in April 2003.

**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	Storage	N	N	309.000	309.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00

Comment # 4974: The additional characteristics of the waste

Processed waste covers only radioactive concentrates.

Ion exchange resins are in use and are re-generated. Therefore they do not contribute to the waste inventory.

Additionally 385.5 m<sup>3</sup> of solid waste was stored in NPP Temelin in 2006 and 119,2 t in 2007.



## Site (Data) : ETE

Stock of waste as at December 2007

Country: CZECH REPUBLIC

Reporting Year: 2007

**Processing - Treatment method(s)**

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

**Processing - Conditioning method(s)**

Method	Status			
	Planned	R&D program	Current practice method use over the last 5 years	Past Practice
Bituminization	N	N	Increase	N
Polymerization	N	N	Increase	N

## Site (Structure) : Bratrstvi

Country: CZECH REPUBLIC

Reporting Year: 2007

Full Name: URAO Bratrstvi

Location: Jachymov

Description:

Official Website:

License Holder(s): SURAO (Radioactive Waste Repository Authority)

Comment **# 388: Information**

The Bratrstvi facility was built in an abandoned uranium mine near Jachymov (Jochimsthal). It is used for waste containing natural radionuclides (Ra-226, Pb-210, Uranium and Thorium isotopes).

Waste management facilities that are located at this site:

<b>Facility:</b>	<b>URAO B</b>
<b>Description:</b>	

## Site (Structure) : Bratrstvi

Country: CZECH REPUBLIC

Reporting Year: 2007

**Disposal part of facility URAO B**

The following shows disposal status for waste classes and SRS.

Waste Class	Actual	Planned
TRW	No	No
LILW-SL	No	No
LILW-LL	Yes	Yes
HLW	No	No

List SRS?	Yes
List UMMT?	No

Type:	rock cavern (mountain/hill)		
Facility is modular?	No		
Capacity existing (m3):	1200	Capacity planned (m3):	1200

Depth (m):	30-60	Host medium:	crystalline rock (gneiss)
------------	-------	--------------	---------------------------

Phase Name	Start Year	End Year	Estimate
planning and/or concept assessment	1970		False
site selection		1971	False
design	1971		False
construction	1972	1973	False
commissioning	1974		False
operation	1974	2030	False
closure	2030		True

**Comment # 7197: Total volume of repository**

The volume of the facility is about 3500 m3 including transport corridors. Reviews of historical records and documents were done during 1999-2003.

**Comment # 14552: Disposal Facility URAO B**

From the total volume of 3500 m3 of only 1200 m3 can be used for disposal of RAW. At the end of 2004 about 880 m3 of RAW (73.3% from available disposal volume) were disposed

**Comment # 14553: Disposal Facility URAO B**

At the end of 2006 about 955 m3 of RAW (79.6% from available disposal volume) were disposed

## Site (Data) : Bratrstvi

Stock of waste as at December 2007

Country: CZECH REPUBLIC

Reporting Year: 2007

**Site Name:** Bratrstvi

Full Name: URAO Bratrstvi

Inventory Reporting Date: December 2007

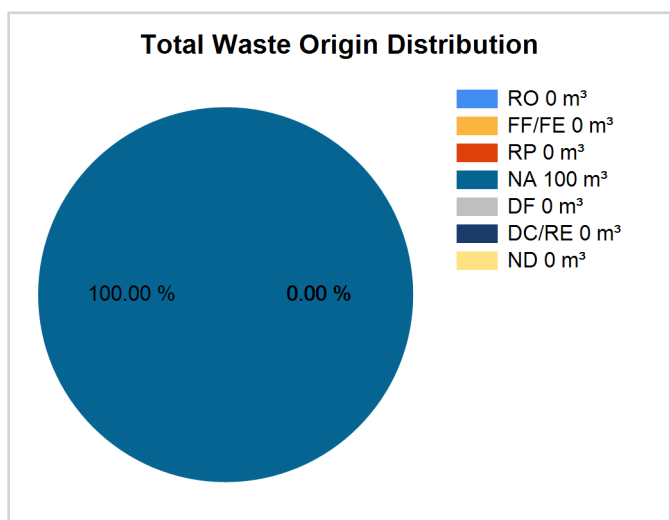
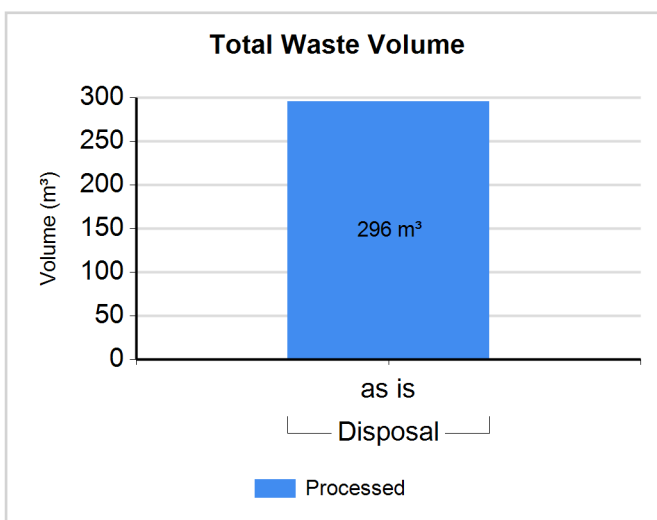
Waste Matrix Used: cz-eu

Comment # 388: Information

The Bratrstvi facility was built in an abandoned uranium mine near Jachymov (Joachimsthal). It is used for waste containing natural radionuclides (Ra-226, Pb-210, Uranium and Thorium isotopes).

**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-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	Disposal	Y	N	296.000	296.000	0.00	0.00	0.00	100.00	0.00	0.00	0.00

Comment # 9782: Disposal facilities/Class LILW-LL/Site Bratrstvi

The volume of disposed RAW has been updated based on the recent historical data analysis. The RAW volume reported in 2003 has been derived in the safety case using conservative assumptions (all packages with 200 l volume). The historical data survey in 2005 showed, that about 50 % of used packages have volume of 100 l.

**Spent Sources <=30 years in Disposition**

Nuclide	Number of Sources/Total Activity of Sources (GBq)			c	o	n	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								
Pb-210	7			Y	N	N				7.900E-001	2007.12
	7.900E-001										

## Site (Data) : Bratrstvi

Stock of waste as at December 2007

Country: CZECH REPUBLIC

Reporting Year: 2007

**Spent Sources > 30 years in Disposition**

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					
Ra-226	187	1	Y	N	N	6.030E+001	2007.12
	5.300E+001	7.300E+000					

## Site (Structure) : Dukovany

Country: CZECH REPUBLIC

Reporting Year: 2007

Full Name: URAO Dukovany

Location: Dukovany

Description:

Official Website:

License Holder(s): SURAO (Radioactive Waste Repository Authority)

Comment # 381: Information

The Dukovany repository (URAO) serves for radioactive waste from operation of Czech NPP. It does not accept waste from research, industry and medicine or spent sealed sources. The accepted waste corresponds to the IAEA LLW-SL waste class.

Comment # 14554: Site Dukovany

Since 2006 repository can accommodate unprocessed institutional waste and operational waste immobilised not only in bitumene, glas and cement, but also in aluminosilicate matrix.

Waste management facilities that are located at this site:

<b>Facility:</b>	<b>URAO D</b>
<b>Description:</b>	Near-surface radioactive waste repository for disposal of operational waste from both NPPs and waste from their decommissioning. Since 2006 also unprocessed RAW of institutional origin can be disposed in the repository.

## Site (Structure) : Dukovany

Country: CZECH REPUBLIC

Reporting Year: 2007

**Disposal part of facility****URAO D**

The following shows disposal status for waste classes and SRS.

Waste Class	Actual	Planned
TRW	No	No
LILW-SL	Yes	Yes
LILW-LL	No	No
HLW	No	No

List SRS?	No
List UMMT?	No

Type:	engineered near surface		
Facility is modular?	Yes		
Capacity existing (m3):	55000	Capacity planned (m3):	55000

Depth (m):	5.3	Host medium:	sedimentary (other)
------------	-----	--------------	---------------------

Phase Name	Start Year	End Year	Estimate
planning and/or concept assessment	1976		False
site selection		1982	False
design		1986	False
construction	1987		False
commissioning		1994	False
operation	1995		False
closure	2100		True

Comment **# 9797: Calculation of used repository capacity**

The reported % of existing capacity used is based on the number of vaults filled by RAW in 200 l drums, which was at the end of 2004 about 9,5 vaults (about 8,5% of the volume of the whole repository - 112 vaults).

Comment **# 14557: Disposal Facility URAO D**

At the end of 2006 5579 m<sup>3</sup> of waste (11,5 vaults; about 10 % of the volume of the whole repository) was disposed in the repository.

## Site (Data) : Dukovany

Stock of waste as at December 2007

Country: CZECH REPUBLIC

Reporting Year: 2007

**Site Name:** Dukovany

Full Name: URAO Dukovany

Inventory Reporting Date: December 2007

Waste Matrix Used: cz-eu

Comment # 381: Information

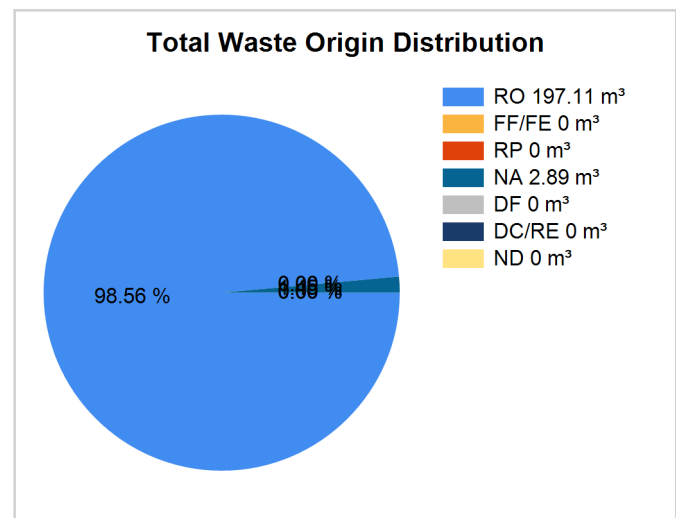
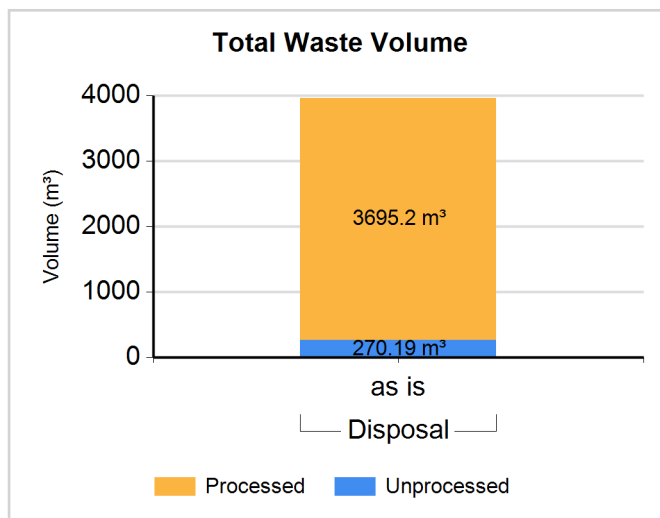
The Dukovany repository (URAO) serves for radioactive waste from operation of Czech NPP. It does not accept waste from research, industry and medicine or spent sealed sources. The accepted waste corresponds to the IAEA LLW-SL waste class.

Comment # 14554: Site Dukovany

Since 2006 repository can accommodate unprocessed institutional waste and operational waste immobilised not only in bitumene, glas and cement, but also in aluminosilicate matrix.

**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	Disposal	N	N	270.190	270.190	97.11	0.00	0.00	2.89	0.00	0.00	0.00
LILW-SL	Disposal	Y	N	3695.200	3695.200	100.00	0.00	0.00	0.00	0.00	0.00	0.00



## Site (Structure) : Hostim

Country: CZECH REPUBLIC

Reporting Year: 2007

Full Name: URAO Hostim

Location: Hostim

Description:

Official Website:

License Holder(s): SURAO (Radioactive Waste Repository Authority)

Comment **# 389: Information**

The repository was situated near the City of Beroun. It was constructed in an abandoned limestone mine and put into operation in 1959 for radioactive waste from research, industry and medicine. It was closed in 1965 and most of waste packages were transferred in the Richard repository. The repository was finally filled with concrete and sealed in 1997. The site is monitored.

Waste management facilities that are located at this site:

## Site (Structure) : Hostim

Country: CZECH REPUBLIC

Reporting Year: 2007

<b>Facility:</b>	<b>URAO H</b>
<b>Description:</b>	The repository was used to dispose RAW of institutional origin and has been closed.

**Disposal part of facility**                      **URAO H**

The following shows disposal status for waste classes and SRS.

Waste Class	Actual	Planned
TRW	Yes	No
LILW-SL	No	No
LILW-LL	No	No
HLW	No	No

List SRS?	No
List UMMT?	No

Type:	rock cavern (mountain/hill)		
Facility is modular?	No		
Capacity existing (m3):	1690	Capacity planned (m3):	1690

Depth (m):	30	Host medium:	sedimentary (other)
------------	----	--------------	---------------------

Phase Name	Start Year	End Year	Estimate
planning and/or concept assessment	1959		False
commissioning		1959	False
operation	1959	1964	False
closure	1965	1997	False
institutional control	1998		False

## Site (Data) : Hostim

Stock of waste as at December 2007

Country: CZECH REPUBLIC

Reporting Year: 2007

**Site Name:** Hostim

Full Name: URAO Hostim

Inventory Reporting Date: December 2007

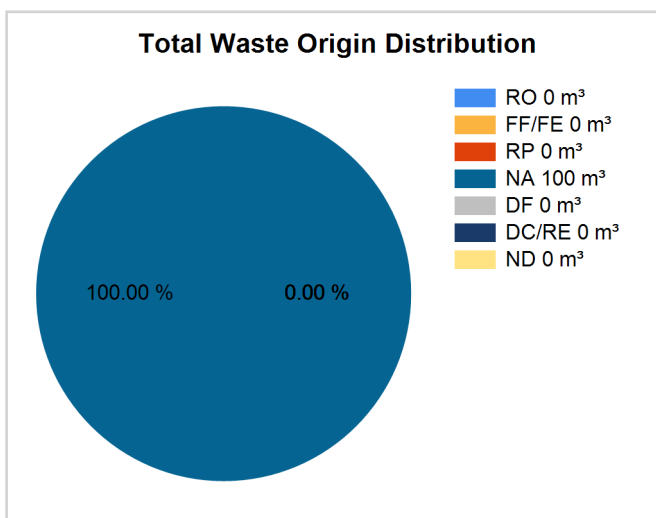
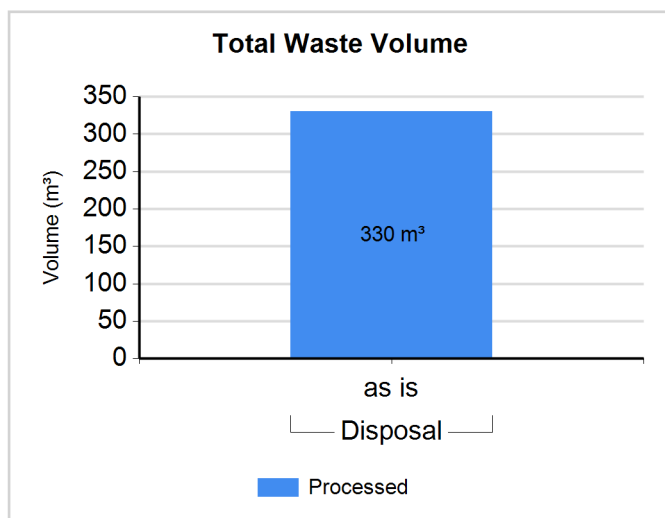
Waste Matrix Used: cz-eu

Comment # 389: Information

The repository was situated near the City of Beroun. It was constructed in an abandoned limestone mine and put into operation in 1959 for radioactive waste from research, industry and medicine. It was closed in 1965 and most of waste packages were transferred in the Richard repository. The repository was finally filled with concrete and sealed in 1997. The site is monitored.

**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:** TRW

Waste Class Name	Location / Facility	Proc	Est.	Volume "as is" (m³)	Volume "as dispo" (m³)	RO %	FF/FE %	RP %	NA %	DF %	DC/RE %	ND %
TRW	Disposal	Y	N	330.000	330.000	0.00	0.00	0.00	100.00	0.00	0.00	0.00

## Site (Structure) : Richard

Country: CZECH REPUBLIC

Reporting Year: 2007

Full Name: URAO Richard

Location: Na Bídnici 2  
CZ-412 01 Litomerice

Description:

Official Website:

License Holder(s): SURAO (Radioactive Waste Repository Authority)

Comment # 380: Information

Abandoned mine Richard ( 60 km N of Prague) serves as repository for radioactive waste from research, industry and medicine.

Comment # 14555: Site Richard

In 2006 and 2007 disposal chambers 8/2, 9 a 12 were upgraded (hydraulic cage) and filled with waste. New concrete floor was laid down in chambers 13 and 22 and these chambers will be used for the disposal of waste.

Waste management facilities that are located at this site:

<b>Facility:</b>	<b>URAO R</b>
<b>Description:</b>	The repository is used to dispose of particularly RAW containing artificial radionuclides. Separately from the disposed RAW there are also stored RAW, which cannot be currently disposed and wait to be disposed in a suitable repository.

**Storage part of facility URAO R**

The following shows storage status for waste classes and SRS.

Waste Class	Actual	Planned
TRW	No	No
LILW-SL	Yes	Yes
LILW-LL	Yes	Yes
HLW	No	No

List SRS?	Yes
List UMMT?	No

Capacity:	
-----------	--

## Types of Storage Units

Storage Unit Name	Type Name	Year Opened	Closed?	Full?	Modular?	Contains SRS?
komora	cave	1964	No	No	No	Yes

## Site (Structure) : Richard

Country: CZECH REPUBLIC

Reporting Year: 2007

**Disposal part of facility****URAO R**

The following shows disposal status for waste classes and SRS.

Waste Class	Actual	Planned
TRW	No	No
LILW-SL	Yes	Yes
LILW-LL	No	No
HLW	No	No

List SRS?	Yes
List UMMT?	No

Type:	rock cavern (mountain/hill)		
Facility is modular?	No		
Capacity existing (m3):	8400	Capacity planned (m3):	8400

Depth (m):	30-60	Host medium:	sedimentary (other)
------------	-------	--------------	---------------------

Phase Name	Start Year	End Year	Estimate
planning and/or concept assessment	1961		False
site selection		1961	False
design	1961		False
construction		1962	False
commissioning	1964		False
operation	1964	2070	False
closure	2070		True
ACTIVITY: upgrading	2006	2007	False

Comment **# 9799: Calculation of used repository capacity**

From the total volume of 17 050 m3 of only 8400 m3 can be used for disposal of RAW. At the end of 2004 about 6260 m3 of RAW, at the end of 2006 about 6478 m3 of RAW and at the end of 2007 about 7300 m3 were disposed.

## Site (Data) : Richard

Stock of waste as at December 2007

Country: CZECH REPUBLIC

Reporting Year: 2007

**Site Name:** Richard

Full Name: URAO Richard

Inventory Reporting Date: December 2007

Waste Matrix Used: cz-eu

Comment # 380: Information

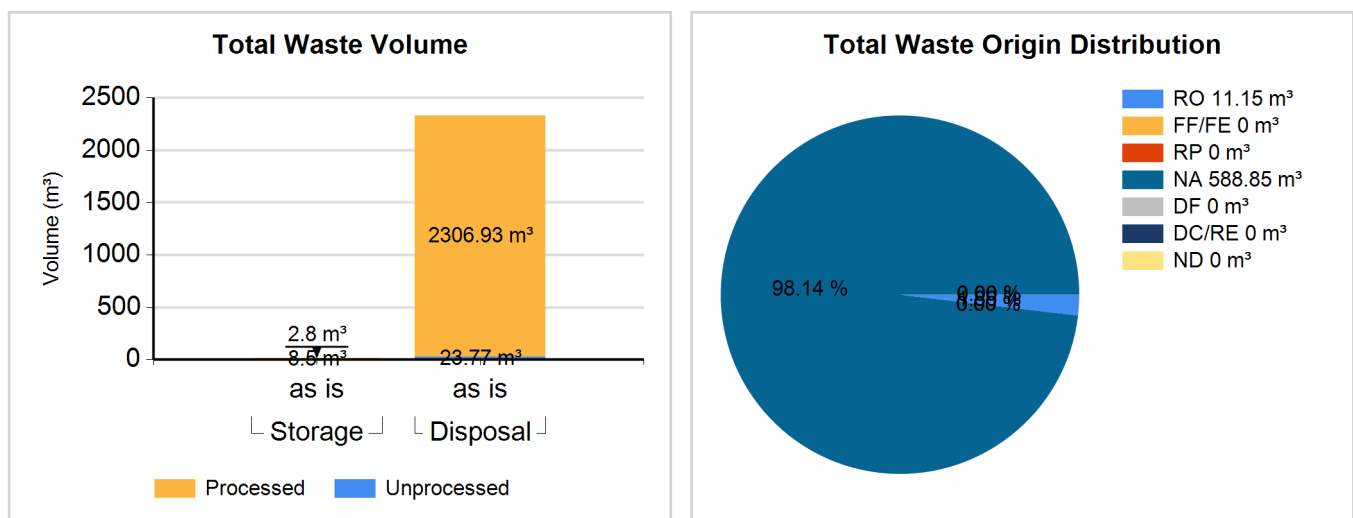
Abandoned mine Richard ( 60 km N of Prague) serves as repository for radioactive waste from research, industry and medicine.

Comment # 14555: Site Richard

In 2006 and 2007 disposal chambers 8/2, 9 a 12 were upgraded (hydraulic cage) and filled with waste. New concrete floor was laid down in chambers 13 and 22 and these chambers will be used for the disposal of waste.

**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	Storage	N	N	4.600	4.600	0.00	0.00	0.00	100.00	0.00	0.00	0.00
LILW-SL	Storage	Y	N	0.800	0.800	0.00	0.00	0.00	100.00	0.00	0.00	0.00
LILW-SL	Disposal	N	N	23.770	23.770	0.00	0.00	0.00	100.00	0.00	0.00	0.00
LILW-SL	Disposal	Y	N	2306.930	2306.930	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	Storage	N	N	3.900	3.900	11.15	0.00	0.00	88.85	0.00	0.00	0.00
LILW-LL	Storage	Y	N	2.000	2.000	0.00	0.00	0.00	100.00	0.00	0.00	0.00

## Site (Data) : Richard

Stock of waste as at December 2007

Country: CZECH REPUBLIC

Reporting Year: 2007

**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 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					
Cf-252	1			Y	N	N	1.500E-003	2007.12
	1.500E-003							
Co-60		53		Y	N	N	2.600E+005	2007.12
		2.600E+005						
Cs-137	22	13	3	Y	N	N	4.500E+005	2007.12
	1.400E+001	2.300E+005	2.200E+005					
Eu-152			1	Y	N	N	5.300E+004	2007.12
			5.300E+004					
Pm-147	1			Y	N	N	6.100E-005	2007.12
	6.100E-005							

**Spent Sources <=30 years in Disposition**

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	7			Y	N	N	1.600E-004	2007.12
	1.600E-004							
Cd-109	14			Y	N	N	2.300E+000	2007.12
	2.300E+000							
Ce-144	2			Y	N	N	1.300E-004	2007.12
	1.300E-004							
Ce-144				Y	N	N	0.000E+000	2007.12
Cf-252	15	1		Y	N	N	6.660E+000	2007.12
	3.600E-001	6.300E+000						

## Site (Data) : Richard

Stock of waste as at December 2007

Country: CZECH REPUBLIC

Reporting Year: 2007

Co-57	15			Y	N	N	1.700E-004	2007.12
	1.700E-004							
Co-60	1313	181		Y	N	N	3.303E+005	2007.12
	2.600E+002	3.300E+005						
Cs-134	1			Y	N	N	1.100E-004	2007.12
	1.100E-004							
Cs-137	396	177		Y	N	N	3.402E+005	2007.12
	2.300E+002	3.400E+005						
Eu-152	36	6		Y	N	N	1.850E+002	2007.12
	1.500E+001	1.700E+002						
Fe-55	40	6		Y	N	N	1.530E+002	2007.12
	1.300E+001	1.400E+002						
H-3	3	7		Y	N	N	3.701E+003	2007.12
	8.400E-001	3.700E+003						
Kr-85	79	34		Y	N	N	1.310E+003	2007.12
	1.100E+002	1.200E+003						
Mn-54	1			Y	N	N	4.200E-008	2007.12
	4.200E-008							
Na-22	2			Y	N	N	6.100E-006	2007.12
	6.100E-006							
Pb-210	1			Y	N	N	1.000E-004	2007.12
	1.000E-004							
Pm-147	35			Y	N	N	6.000E+001	2007.12
	6.000E+001							
Ru-106	3			Y	N	N	1.600E-003	2007.12
	1.600E-003							
Se-75	16			Y	N	N	1.400E-002	2007.12
	1.400E-002							
Sr-89				Y	N	N	0.000E+000	2006.12



## Site (Data) : Richard

Stock of waste as at December 2007

Country: CZECH REPUBLIC

Reporting Year: 2007

Sr-90	282	31		Y	N	N	2.660E+003	2007.12
	1.600E+002	2.500E+003						
TI-204	4			Y	N	N	5.700E-002	2007.12
	5.700E-002							
Tm-170				Y	N	N	0.000E+000	2007.12
Y-88				Y	N	N	0.000E+000	2006.12
Zn-65	1			Y	N	N	9.100E-005	2007.12
	9.100E-005							

## Site (Data) : Richard

Stock of waste as at December 2007

Country: CZECH REPUBLIC

Reporting Year: 2007

**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	194	58	Y	N	N	4.536E+003	2007.12
	3.600E+001	4.500E+003					
C-14			Y	N	N	0.000E+000	
K-40			Y	N	N	0.000E+000	
Ni-63			Y	N	N	0.000E+000	
Pu-238	4	2	Y	N	N	1.125E+002	2007.12
	2.500E+000	1.100E+002					
Pu-239	1	40	Y	N	N	2.901E+003	2007.12
	1.100E+000	2.900E+003					
Ra-226	1		Y	N	N	3.700E-001	2007.12
	3.700E-001						
U-238			Y	N	N	0.000E+000	

## Site (Data) : Richard

Stock of waste as at December 2007

Country: CZECH REPUBLIC

Reporting Year: 2007

**Spent Sources > 30 years in Disposition**

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	127	66	Y	N	N	7.468E+003	2007.12
	6.800E+001	7.400E+003					
C-14	13	2	Y	N	N	1.430E+001	2007.12
	3.300E+000	1.100E+001					
K-40	2		Y	N	N	6.900E-007	2007.12
	6.900E-007						
Ni-63	1		Y	N	N	3.200E-001	2007.12
	3.200E-001						
Pu-239	17	25	Y	N	N	1.206E+003	2007.12
	6.200E+000	1.200E+003					

## Regulators

Country: CZECH REPUBLIC

Reporting Year: 2007

<b>Name:</b>	<b>SUJB</b>
Full Name:	State Office for Nuclear Safety
Divison:	Division of Radioactive Waste and Spent Fuel Management
City or Town:	Prague
Main Website:	

## Regulations / Laws

Country: CZECH REPUBLIC

Reporting Year: 2007

<b>Name:</b>	<b>Atomic Act</b>	
Title or Name:	Act on Peaceful Use of Nuclear Energy and Ionizing radiation	
Reference Number:	18/1997	
Date Promulgated or Proclaimed:	1/24/1997	Law

<b>Name:</b>	<b>307</b>	
Title or Name:	Decree of the State Office for Nuclear Safety on Radiation Protection	
Reference Number:	307/2002	
Date Promulgated or Proclaimed:	6/13/2002	Regulation

<b>Name:</b>	<b>317</b>	
Title or Name:	Decree Of the State Office for Nuclear Safety, on Type Approval of Packaging Assemblies for Transport, Storage and Disposal of Nuclear Materials and Radioactive Substances, on Type Approval of Ionizing Radiation Sources and on Transport of Nuclear Materials and Specified Radioactive Substances	
Reference Number:	317/2002	
Date Promulgated or Proclaimed:	6/13/2002	Regulation

<b>Name:</b>	<b>145</b>	
Title or Name:	Decree of the State Office for Nuclear Safety, on Accounting for and Control of Nuclear Materials and their Detailed Specification	
Reference Number:	145/1997	
Date Promulgated or Proclaimed:	6/19/1997	Regulation

<b>Name:</b>	<b>214</b>	
Title or Name:	Decree of the State Office for Nuclear Safety, on Quality Assurance in Activities Related to the Utilization of Nuclear Energy and in Radiation Activities, and Laying Down Criteria for the Assignment and Categorization of Classified Equipment into Safety Classes	
Reference Number:	214/1997	
Date Promulgated or Proclaimed:	8/15/1997	Regulation

## Regulations / Laws

Country: CZECH REPUBLIC

Reporting Year: 2007

<b>Name:</b>	<b>318</b>		
Title or Name:	Decree of the State Office for Nuclear Safety, on Details of Emergency Preparedness of Nuclear Facilities and Workplaces with Ionising Radiation Sources and on Requirements on the Content of On-Site Emergency Plan and Emergency Rule		
Reference Number:	318/2002		
Date Promulgated or Proclaimed:	6/13/2002	Regulation	

<b>Name:</b>	<b>185</b>		
Title or Name:	Decree of the State Office for Nuclear Safety on Decommissioning of Nuclear Facilities or Workplaces of IIIth or IVth Category		
Reference Number:	185/2003		
Date Promulgated or Proclaimed:	6/3/2003	Regulation	

## Future Outlook

Country: CZECH REPUBLIC

Reporting Year: 2007

**Data not available.**

## Policies

Country: CZECH REPUBLIC

Reporting Year: 2007

## National Systems

Policy		(Yes;Partially;No)
Q14	Has your Country implemented a national policy for radioactive waste management?	Yes
Comment	# 7409: Joint Convention report	
	For more details see "National Report of the Czech Republic under the Joint Convention on Safety in SF Management and Safety in RAW Management (Chapter 2)" at www.sujb.cz	

Strategies		(Yes;Partially;No)
Q15	Has your country developed strategies to implement a national policy?	Yes
Attachment	#818: Questionnaire	
	WM concept RAWRA.doc	
	Summary of the Concept of Radioactive Waste Management in the Czech Republic	

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	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	Yes



## Policies

Country: CZECH REPUBLIC

Reporting Year: 2007

<b>Responsibilities</b>		<b>(Complete;Incomplete)</b>
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
<b>Activities</b>		<b>(Yes;Partially;No)</b>
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
<b>Clearance</b>		<b>(Yes;No)</b>
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)?	Yes
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

## Policies

Country: CZECH REPUBLIC

Reporting Year: 2007

## 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
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
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?	Yes
Q63	Does your Country have any written policies to address active institutional controls or passive institutional controls, such as monitoring or access restrictions?	Yes
Q65	access restrictions	Yes
Q66	drainage and/or leachate collection system(s)	Yes
Q67	leachate treatment systems	Yes
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

## Policies

Country: CZECH REPUBLIC

Reporting Year: 2007

**Processing/Storage**

<b>Policies/Procedures</b>		<b>(Yes;No)</b>
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
<b>Implementation</b>		<b>(Yes;No)</b>
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?	Yes
Q82	In your Country are there any mobile waste processing facilities?	No
<b>Foreign</b>		<b>(Yes;No)</b>
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

Comment **# 9781: Policies Processing/Storage-Foreign**

It is expected, that within the framework of the Russian Research Reactor Fuel Return Program covered in the Global Threat Reduction Initiative the spent fuel from research reactors will be shipped to the Russian Federation for reprocessing before 2010.

## Policies

Country: CZECH REPUBLIC

Reporting Year: 2007

## 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)
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
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?	Yes
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?	No
Q103	Does your Country have plans to implement dedicated disposal facilities for spent SRS?	No
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?	Yes

## Policies

Country: CZECH REPUBLIC

Reporting Year: 2007

## 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 - All

Comment # 6915: Act No. 18/1997

Licence Application shall contain

- in the event that radioactive waste is to be generated as a part of activities being licensed, a document demonstrating safe management of radioactive waste, including associated funding of this management;
- decommissioning programmes as specified in the licence;
- an estimate of total costs of decommissioning verified by the Radioactive Waste Repository Authority exceeds 300 000 CZK, steadily make provision for decommissioning of nuclear installation or category III or IV workplace, so that financial resources deposited on a blocked account will be available for preparation and performing of decommissioning, at the required time and in the required amount

## 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? Yes - Some

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

## Future Outlook

Country: CZECH REPUBLIC

Reporting Year: 2007

**Data not available.**

## Future Outlook

Country: CZECH REPUBLIC

Reporting Year: 2007

**Data not available.**

## Future Outlook

Country: CZECH REPUBLIC

Reporting Year: 2007

**Data not available.**



## Future Outlook

Country: CZECH REPUBLIC

Reporting Year: 2007

**Data not available.**

## Future Outlook

Country: CZECH REPUBLIC

Reporting Year: 2007

**Data not available.**

## Future Outlook

Country: CZECH REPUBLIC

Reporting Year: 2007

**Data not available.**

## Future Outlook

Country: CZECH REPUBLIC

Reporting Year: 2007

**Data not available.**

## Future Outlook

Country: CZECH REPUBLIC

Reporting Year: 2007

**Data not available.**