



Country Waste Profile Report for
ARGENTINA
Reporting Year: 2008

*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: ARGENTINA

Reporting Year: 2008

Waste Class Matrix: **IAEA Def.**

This country does use the IAEA Scheme: Yes

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

Comment **# 106: Waste classification in Argentina**

A waste classification matrix is not legislated in Argentina. The IAEA default matrix will be used just for reporting to the NEWMDB. Moreover, the IAEA matrix was used to supply the information for the WMDB.

Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management. First National Report - 2003 presents three categories for radioactive waste. The criteria to define and characterize radioactive waste in Argentina are related to the final disposal technological system proposed for each category.

Class B Waste (Low level Disposable Waste)
 Class M (Intermediate Level) Disposable Waste
 Class A (High Level and/or Long Lived) Disposable Waste

Attachment **#1213: Waste Matrix**

Classes.doc

A table describing the radioactive waste classification presented in the First National Report for the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.

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

Is not defined

Groups Overview

Country: ARGENTINA

Reporting Year: 2008

Reporting Group:	RG1			
Inventory Reporting Date:	December 2008			
Waste Matrix Used:	IAEA Def.			
Description:	This group will inform about the waste inventory located in the only authorized site to manage radwaste in Argentina. The name of the place is Ezeiza Waste Management Area (AGE).			
Site Name	Facility Name	Facilities Defined		
AGE	COMPACTOR	processing		
	CP			disposal
	DS		storage	
	ID	processing		
	IRWS		storage	
	LLLWT			disposal
	LLSWT			disposal
	M1		storage	
	TN		storage	

Groups Overview

Country: ARGENTINA

Reporting Year: 2008

Reporting Group:	RG2
Inventory Reporting Date:	December 2008
Waste Matrix Used:	IAEA Def.
Description:	This group will inform about the radioactive waste stored in the two nuclear power plants in Argentina. CNA I and CNE.

Site Name	Facility Name	Facilities Defined		
CNA I	CEMENT	processing		
	COMPACTOR	processing		
	DRUMS		storage	
	EVAPORATOR	processing		
	FILTERS		storage	
	RESINS 1		storage	
	RESINS 2		storage	
	TR SYSTEM	processing		
CNE	COMPACTOR	processing		
	DRUMS		storage	
	FILTERS		storage	
	RESINS		storage	

Comment **# 9935: Reporting Group RG2**

Nuclear Power plants are operated by Nucleoeléctrica Argentina S.A. (NASA).

The fuel used by both nuclear power plants is natural uranium and the coolant/moderator is heavy water.

Site (Structure) : AGE

Country: ARGENTINA

Reporting Year: 2008

Full Name: EZEIZA WASTE MANAGEMENT AREA

Description:

Official Website:

License Holder(s): PEDRO SOTO
 e-mail: psoto@cae.cnea.gov.ar
 Telephone: (54-11) 6779-8417
 Fax: (54-11) 6779-8535

Waste management facilities that are located at this site:

Facility:	COMPACTOR		
Description:	This plant is used to compact low-level solid waste in 200 liter drums. A 16-ton hydraulic press is used to reduce the waste volume.		
Processing part of facility	COMPACTOR		
The following shows processing status for waste classes and SRS.			
Waste Class	Actual	Planned	
LILW-SL	Yes	Yes	
LILW-LL	Yes	Yes	
HLW	No	No	
Type:	Treatment, Conditioning		
Year opened:	1973		

Site (Structure) : AGE

Country: ARGENTINA

Reporting Year: 2008

Facility:	CP
Description:	Concrete Pits. This facility is considered an alternative for the management of low-impact solid waste that according to its activity or geometry can not be disposed of in the existing trenches. Historic wastes have been disposed of in them.

Disposal part of facility CP

The following shows disposal status for waste classes and SRS.

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

List SRS?	No
List UMMT?	No

Type:	borehole		
Facility is modular?	Yes		
Capacity existing (m3):	240	Capacity planned (m3):	240

Depth (m):	10	Host medium:	sedimentary (other)
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Phase Name	Start Year	End Year	Estimate
design	1968	1970	True
construction	1968	1971	True
commissioning	1968	1972	True
operation	1969	2001	False

Comment # 7253: CP Comments

The system comprises two underground pits (4m diameter and 10m deep) with 30cm thick reinforced concrete side walls and bottom. Wastes disposed of in this system are usually metal parts from contaminated areas. Periodically, concrete is poured inside the pits in order to immobilize the contaminated materials and reduce the dose rate at the top.

The first pit was commissioned in 1972 and was operated until 1995, while the second was in operation from 1999 to 2001, when the safety re-assessment of the complete AGE was commenced. The first pit operated without an Operating License and therefore the wastes in it are considered historic.

In addition, there are another two previous and smaller pits with historic wastes.

Site (Structure) : AGE

Country: ARGENTINA

Reporting Year: 2008

Facility:	DS					
Description:	200 liters waste packages from nuclear power plants that couldn't be disposed of in the LLSWT system have been stored in marine containers.					
Storage part of facility		DS				
The following shows storage status for waste classes and SRS.						
Waste Class	Actual	Planned				
LILW-SL	Yes	No				
LILW-LL	No	No				
HLW	No	No				
List SRS?	No					
List UMMT?	No					
Capacity:	513 drums have been stored in marine containers.					
Types of Storage Units						
Storage Unit Name	Type Name	Year Opened	Closed?	Full?	Modular?	Contains SRS?
DS	container (marine)	1998	Yes	No	No	No

Site (Structure) : AGE

Country: ARGENTINA

Reporting Year: 2008

Facility:	ID		
Description:	The Decontamination Facility (ID) was built inside an existing building using masonry and reinforced concrete structures. It is used to decontaminate small pieces.		
Processing part of facility ID			
The following shows processing status for waste classes and SRS.			
Waste Class	Actual	Planned	
LILW-SL	Yes	Yes	
LILW-LL	Yes	Yes	
HLW	No	No	
Type:	Treatment		
Year opened:	2000		

Site (Structure) : AGE

Country: ARGENTINA

Reporting Year: 2008

Facility:	IRWS
Description:	Infected Radioactive Waste Storage. It is a new facility licensed during 2004 to store 50-liter drums.

Storage part of facility **IRWS**

The following shows storage status for waste classes and SRS.

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

List SRS?	No
List UMMT?	No

Capacity:	The capacity of the storage is about 200 m3.
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Types of Storage Units

Storage Unit Name	Type Name	Year Opened	Closed?	Full?	Modular?	Contains SRS?
IRWS	building	2004	No	No	No	No

Site (Structure) : AGE

Country: ARGENTINA

Reporting Year: 2008

Facility:	LLLWT
Description:	There are three semi-containment trenches for low-activity liquid wastes. This facility has been designed for very low-level liquid waste that were not able to be directly discharged as effluents.

Disposal part of facility **LLLWT**

The following shows disposal status for waste classes and SRS.

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

List SRS?	No
List UMMT?	No

Type:	trench(es)		
Facility is modular?	Yes		
Capacity existing (m3):	1200	Capacity planned (m3):	1200

Depth (m):	3	Host medium:	sedimentary (other)
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Phase Name	Start Year	End Year	Estimate
design	1968	1970	True
construction	1968	1971	True
commissioning	1971	1971	True
operation	1971	2001	False

Comment **# 7251: LLLWT Comments**

The system comprises three ionic exchange beds formed by selected soil mixtures with a larger proportion of calcareous silts and sand added to improve the process efficiency. These soils allow radionuclides with very short half-life periods to decay to non significant levels during their stay in the bed mass. The operating capacity for each one of these systems is approximately 2 m3/day. A network of phreatometers allows periodical groundwater control. The systems were commissioned in 1971. Two units ended operations in 1986, while the third unit was functioning until the year 2001 when the safety re-assessment of the complete AGE was commenced. In view of the fact that the Operating license of these systems was not granted by ARN until 1995, all liquid wastes disposed of before 1995 are considered historic.

Site (Structure) : AGE

Country: ARGENTINA

Reporting Year: 2008

Facility:	LLSWT
Description:	Trench N°1 (700m3) was closed in 1988 with some historic waste in it. Trench N°2 (1120m3) started operation in 1989. It has been licensed to dispose of 200 liter drums with compacted solid waste, cemented liquid waste, and conditioned SRS.

Disposal part of facility LLSWT

The following shows disposal status for waste classes and SRS.

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

List SRS?	No
List UMMT?	No

Type:	trench(es)		
Facility is modular?	Yes		
Capacity existing (m3):	1820	Capacity planned (m3):	1820

Depth (m):	1.2	Host medium:	sedimentary (other)
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Phase Name	Start Year	End Year	Estimate
design	1974	1988	False
construction	1974	1988	False
commissioning	1974	1988	False
operation	1975		False
EVENT: operation suspended	2001		False

Site (Structure) : AGE

Country: ARGENTINA

Reporting Year: 2008

Comment **# 7183: LLSWT Comments**

The first trench was built in natural soil without any type of engineered improvement.

The second trench was commissioned in 1989 and only one third of the total capacity is covered. This second trench was operated without license until 1995, and for that reason all the wastes disposed until that date are considered historic.

This second trench was built in a selected calcareous-silty soil compacted to 98% of its maximum theoretical value, supporting a leveled broken stone bed with slopes toward both sides and 30cm thick concrete perimeter retaining walls. The rain water drainage system prevents water accumulation around drum bases. Coverage of the first trench's last section as well as the second trench's first third were made using the same engineering concept. The operation of trench N° 2 has been formally suspended since 2001 after three years without having located drums in it. Currently, a facility safety re-assessment is being performed.

Site (Structure) : AGE

Country: ARGENTINA

Reporting Year: 2008

Facility:	M1
Description:	This facility is used for storing Intermediate-level waste, long-lived low-level waste, and also spent/disused radiation sources that according to the operation license can not be disposed of in the disposal facilities.

Storage part of facility M1

The following shows storage status for waste classes and SRS.

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

List SRS?	Yes
List UMMT?	No

Capacity:	The facility was licensed in 1999. It is 60m long, 20m wide and 10m high. The building includes a traveling crane with 3 ton main hook and 2 ton secondary hook and a controlled ventilation system.
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Types of Storage Units

Storage Unit Name	Type Name	Year Opened	Closed?	Full?	Modular?	Contains SRS?
M1	building	2000	No	No	No	Yes

Site (Structure) : AGE

Country: ARGENTINA

Reporting Year: 2008

Facility:	TN					
Description:	The Reception and Handling Yard was conceived for reception of different types of wastes. The yard comprises a reinforced concrete platform of about 800 m2 covered by a parabolic shed , fenced by brick or metallic walls.					
Storage part of facility		TN				
The following shows storage status for waste classes and SRS.						
Waste Class	Actual	Planned				
LILW-SL	Yes	Yes				
LILW-LL	Yes	Yes				
HLW	No	No				
List SRS?	Yes					
List UMMT?	No					
Capacity:	The yard use was authorized in 1994. At this time, it is also being used as a temporary storage.					
Types of Storage Units						
Storage Unit Name	Type Name	Year Opened	Closed?	Full?	Modular?	Contains SRS?
TN	concrete pad	1989	No	No	No	Yes
TN	building	2008	No	No	No	No

Site (Data) : AGE

Stock of waste as at December 2008

Country: ARGENTINA

Reporting Year: 2008

Site Name: AGE

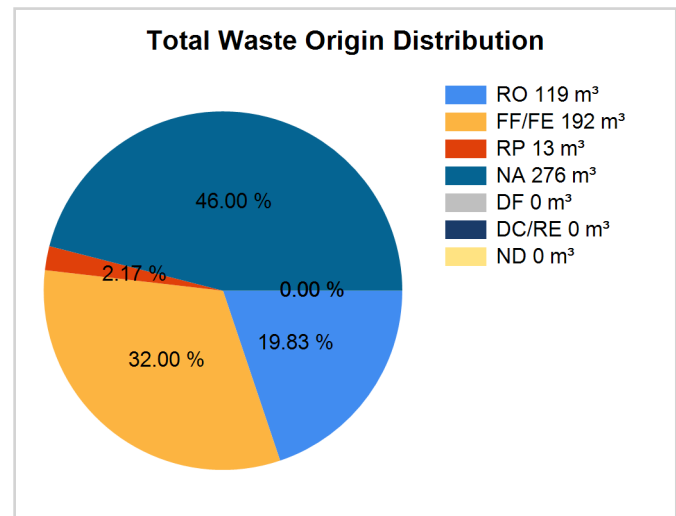
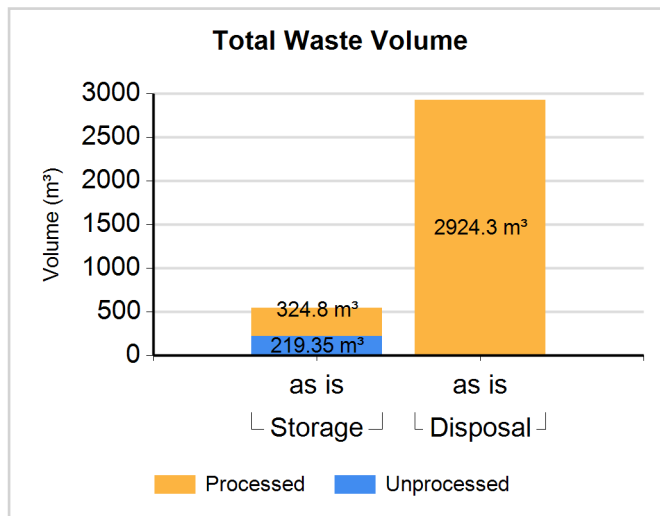
Full Name: EZEIZA WASTE MANAGEMENT AREA

Inventory Reporting Date: December 2008

Waste Matrix Used: IAEA Def.

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	Y	215.050	215.050	8.00	42.00	0.00	50.00	0.00	0.00	0.00
LILW-SL	Storage	Y	Y	301.800	301.800	41.00	32.00	0.00	27.00	0.00	0.00	0.00
LILW-SL	Disposal	Y	Y	2754.700	2754.700	68.00	1.00	0.00	31.00	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	Y	4.300	4.300	0.00	28.00	0.00	72.00	0.00	0.00	0.00
LILW-LL	Storage	Y	Y	23.000	23.000	0.00	43.00	0.00	57.00	0.00	0.00	0.00
LILW-LL	Disposal	Y	Y	169.600	169.600	2.00	46.00	13.00	39.00	0.00	0.00	0.00

Site (Data) : AGE

Stock of waste as at December 2008

Country: ARGENTINA

Reporting Year: 2008

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
Radionuclide Separation	N	N	Same	N
Solvent Extraction	Y	N		N

Comment # 7371: Radionuclide Separation

During 2005 an ion exchange process has been implemented in the Mo 99 production plant to separate cesium from the intermediate level waste stream.

Comment # 14743: R&D: Waste Treatment

The chemical treatment of spent ion exchange resins by electromical methods is being studied

Processing - Conditioning method(s)

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

Comment # 7373: Encapsulation

During 2001 to 2003 radium medical sources were encapsulated for long term storage.

Comment # 14742: Waste conditioning

The study of conditioning of LILRW in composite matrices and ceramic compounds has started.

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					
Cd-109	7			N	Y	Y	3.300E-003	2008.12
	3.300E-003							
Cf-252	1			Y	N	Y	1.200E-002	2008.12
	1.200E-002							
Cf-252	9			N	Y	Y	1.300E-001	2008.12
	1.300E-001							

Site (Data) : AGE

Stock of waste as at December 2008

Country: ARGENTINA

Reporting Year: 2008

Cf-252	1			N	Y	Y	1.600E+000	2008.12
	1.600E+000							
Cm-244	1			Y	N	N	3.200E-003	2008.12
	3.200E-003							
Co-60	43			Y	N	Y	2.200E-001	2008.12
	2.200E-001							
Co-60	181	25		N	Y	Y	2.300E+005	2008.12
	6.400E+000	2.300E+005						
Co-60	20	4		N	Y	Y	6.000E+001	2008.12
	1.500E+001	4.500E+001						
Co-60		113		N	Y	Y	5.300E+005	2008.12
		5.300E+005						
Co-60		6	9	N	Y	Y	1.040E+006	2008.12
		1.700E+005	8.700E+005					
Co-60		6		N	Y	Y	3.400E+002	2008.12
		3.400E+002						
Cs-137		7		N	Y	Y	1.200E+003	2008.12
		1.200E+003						
Cs-137		6		N	Y	Y	1.300E+005	2008.12
		1.300E+005						
Cs-137		2		Y	N	Y	8.100E+000	2008.12
		8.100E+000						
Cs-137	40			Y	N	Y	1.100E+001	2008.12
	1.100E+001							
Cs-137	64	45		Y	N	Y	1.220E+003	2008.12
	1.200E+002	1.100E+003						
Cs-137	275			N	Y	Y	6.100E+001	2008.12
	6.100E+001							
Cs-137	117	152		N	Y	Y	4.070E+003	2008.12
	3.700E+002	3.700E+003						

Site (Data) : AGE

Stock of waste as at December 2008

Country: ARGENTINA

Reporting Year: 2008

Cs-137			1	N	Y	Y	1.800E+005	2008.12
			1.800E+005					
Fe-55	20			N	Y	Y	5.700E+000	2008.12
	5.700E+000							
H-3	18	2		N	Y	Y	1.903E+004	2008.12
	2.600E+001	1.900E+004						
Ir-192	288			N	Y	Y	3.700E-002	2008.12
	3.700E-002							
Ir-192	242			Y	N	Y	1.400E+000	2008.12
	1.400E+000							
Kr-85	22	31		N	Y	Y	9.437E+003	2008.12
	3.700E+001	9.400E+003						
Pm-147	4			Y	N	Y	7.700E-001	2008.12
	7.700E-001							
Pm-147	18			N	Y	Y	2.800E+000	2008.12
	2.800E+000							
Po-210	39			N	Y	Y	2.200E-008	2008.12
	2.200E-008							
Sr-90		1		N	Y	Y	1.300E+003	2008.02
		1.300E+003						
Sr-90	112	3		N	Y	Y	2.780E+001	2008.12
	5.800E+000	2.200E+001						
Sr-90		3		N	Y	Y	2.800E+002	2008.12
		2.800E+002						

Spent Sources > 30 years in Storage

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 2 GBq	Group II more than 2GBq								
	num/activity	num/activity								

Site (Data) : AGE

Stock of waste as at December 2008

Country: ARGENTINA

Reporting Year: 2008

Am-241		3	Y	N	Y	9.400E+002	2008.12
		9.400E+002					
Am-241		7	Y	N	Y	1.300E+002	2008.12
		1.300E+002					
Am-241	22		Y	N	Y	3.900E-001	2008.12
	3.900E-001						
Am-241		2	N	Y	Y	2.500E+003	2008.12
		2.500E+003					
Am-241		17	N	Y	Y	2.600E+003	2008.12
		2.600E+003					
Am-241	96	67	N	Y	Y	1.290E+003	2008.12
	1.900E+002	1.100E+003					
Am-241	3243		N	Y	Y	6.400E+003	2008.12
	6.400E+003						
Am-241		12	N	Y	Y	1.300E+002	2008.12
		1.300E+002					
Am-241		1	N	Y	Y	1.100E+002	2008.12
		1.100E+002					
Ni-63	66	12	N	Y	Y	9.000E+001	2008.12
	2.800E+001	6.200E+001					
Pu-238	1		N	Y	Y	8.700E-001	2008.12
	8.700E-001						
Pu-238		20	N	Y	Y	1.500E+003	2008.02
		1.500E+003					
Ra-226	731		Y	N	Y	2.300E+002	2008.02
	2.300E+002						
Ra-226	84		Y	N	Y	8.200E+000	2008.12
	8.200E+000						
Ra-226	97		N	Y	Y	5.500E+001	2008.12
	5.500E+001						

Site (Data) : AGE

Stock of waste as at December 2008

Country: ARGENTINA

Reporting Year: 2008

Ra-226	81		N	Y	Y	2.500E+000	2008.12
	2.500E+000						

Site (Structure) : CNA I

Country: ARGENTINA

Reporting Year: 2008

Full Name: CENTRAL NUCLEAR ATUCHA I
ATUCHA I NUCLEAR POWER PLANT

Description:

Official Website:

License Holder(s): OSVALDO PENNACCHIETTI
Since October 2005

Comment # 9926: CNA I Nuclear Power Plant

Atucha I Nuclear power plant (PHWR type) has an installed power capacity of 357 MW(e).

Waste management facilities that are located at this site:

Facility:	CEMENT												
Description:	The purpose of this facility is to immobilize by cementation the evaporator concentrate, the tank cleaning sludge, liquid wastes from decontamination, and non-compactable and structural solid wastes.												
<p>Processing part of facility CEMENT</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>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	LILW-SL	Yes	Yes	LILW-LL	No	No	HLW	No	No
Waste Class	Actual	Planned											
LILW-SL	Yes	Yes											
LILW-LL	No	No											
HLW	No	No											
Type:	Conditioning												
Year opened:	1992												
Comment	# 9937: Processing Facility CEMENT												
<p>The facility is designed only for low-level wastes. It includes storage and feeding tanks, having a homogenization and sampling system of liquid and sludge waste to be cemented. The immobilization system comprises a reusable blade vertical mixer that allows liquid waste in-drum cementation.</p>													

Site (Structure) : CNA I

Country: ARGENTINA

Reporting Year: 2008

Facility:	COMPACTOR		
Description:	The Compaction System comprises a 16 t hydraulic press, installed in a bay located in the controlled zone inside the reactor building. Compactable solid wastes are collected in plastic bags and compacted in 200 liter drums.		
Processing part of facility	COMPACTOR		
The following shows processing status for waste classes and SRS.			
Waste Class	Actual	Planned	
LILW-SL	Yes	Yes	
LILW-LL	No	No	
HLW	No	No	
Type:	Treatment, Conditioning		
Year opened:	1974		

Site (Structure) : CNA I

Country: ARGENTINA

Reporting Year: 2008

Facility:	DRUMS
Description:	This facility located inside Atucha I nuclear power plant is used to store 200 liters drums with treated and conditioned solid and liquid low level radioactive waste.

Storage part of facility DRUMS

The following shows storage status for waste classes and SRS.

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

List SRS?	No
List UMMT?	No

Capacity:	
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Types of Storage Units

Storage Unit Name	Type Name	Year Opened	Closed?	Full?	Modular?	Contains SRS?
DRUMS	building	0	No	No	No	No

Comment **# 9932: Storage Facility DRUMS**

The following waste types are stored in this facility:

Concentrates and sludge from the cleanup of tanks are immobilized in cement matrices and conditioned in 200-liter drums.

The treatment of compactable solid radioactive waste generated in the operation and maintenance activities, consists of reducing the waste volume by compressing it into 200-liter drums.

Non-compactable solid waste that are immobilized in cement matrixes and conditioned in 200-liter drums.

Site (Structure) : CNA I

Country: ARGENTINA

Reporting Year: 2008

Facility:	EVAPORATOR
Description:	A Decanting/Separator System is used to separate residual waters from solids suspended in the liquid. The system makes the necessary controls to convey the residual waters to the discharge system or to the concentration by evaporation system.

Processing part of facility EVAPORATOR

The following shows processing status for waste classes and SRS.

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

Type:	Treatment
Year opened:	1974

Comment # 9936: Processing Facility EVAPORATOR

Purified water is collected in control tanks where its activity concentration is checked. If the value is lower than the limits set forth in the Operating license, the liquids are eliminated as controlled and scheduled radioactive discharges into the Paraná de las Palmas River. If the value is higher than the permitted limit, the water is returned to the collecting tanks for evaporation treatment.

Site (Structure) : CNA I

Country: ARGENTINA

Reporting Year: 2008

Facility:	FILTERS					
Description:	It is an underground storage used to store spent mechanical filters from the primary circuit of the reactor.					
Storage part of facility		FILTERS				
The following shows storage status for waste classes and SRS.						
Waste Class	Actual	Planned				
LILW-SL	Yes	Yes				
LILW-LL	No	No				
HLW	No	No				
List SRS?	No					
List UMMT?	No					
Capacity:	There are 8 pits of 3 m3 each one.					
Types of Storage Units						
Storage Unit Name	Type Name	Year Opened	Closed?	Full?	Modular?	Contains SRS?
FILTERS	pit	1974	No	No	Yes	No

Site (Structure) : CNA I

Country: ARGENTINA

Reporting Year: 2008

Facility:	RESINS 1					
Description:	Spent ion exchange resin beds from the primary system of water cooling purification are stored in tanks inside Atucha I nuclear power plant					
Storage part of facility		RESINS 1				
The following shows storage status for waste classes and SRS.						
Waste Class	Actual	Planned				
LILW-SL	Yes	Yes				
LILW-LL	No	No				
HLW	No	No				
List SRS?	No					
List UMMT?	No					
Capacity:	There are four tanks, two of 15 m3 and two of 9 m3.					
Types of Storage Units						
Storage Unit Name	Type Name	Year Opened	Closed?	Full?	Modular?	Contains SRS?
RESINS 1	tank (stainless steel)	1974	No	No	Yes	No

Site (Structure) : CNA I

Country: ARGENTINA

Reporting Year: 2008

Facility:	RESINS 2
Description:	This facility has been used to free the tanks with spent ion exchange resin beds.

Storage part of facility**RESINS 2**

The following shows storage status for waste classes and SRS.

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

List SRS?	No
List UMMT?	No

Capacity:	This facility has a capacity of 46 m3
------------------	---------------------------------------

Types of Storage Units

Storage Unit Name	Type Name	Year Opened	Closed?	Full?	Modular?	Contains SRS?
RESINS 2	well	1974	No	No	No	No

Site (Structure) : CNA I

Country: ARGENTINA

Reporting Year: 2008

Facility:	TR SYSTEM														
Description:	The function of the System (TR) is to collect all residual waters produced in the controlled area. The system includes four 10 m3 tanks located in the reactor building.														
<p>Processing part of facility TR SYSTEM</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>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	LILW-SL	Yes	Yes	LILW-LL	No	No	HLW	No	No
Waste Class	Actual	Planned													
LILW-SL	Yes	Yes													
LILW-LL	No	No													
HLW	No	No													
Type:	Treatment														
Year opened:	1974														

Site (Data) : CNA I

Stock of waste as at December 2008

Country: ARGENTINA

Reporting Year: 2008

Site Name: CNA IFull Name: CENTRAL NUCLEAR ATUCHA I
ATUCHA I NUCLEAR POWER PLANT

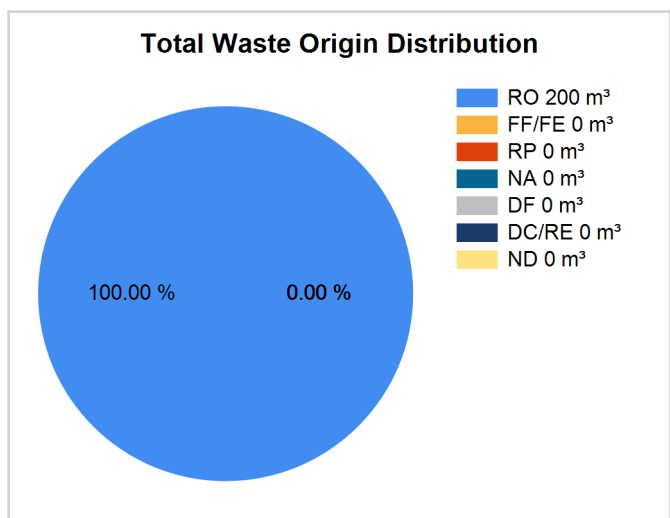
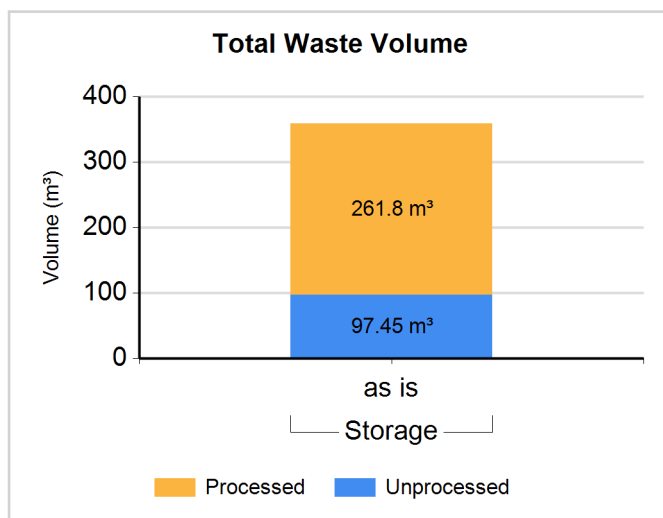
Inventory Reporting Date: December 2008 Waste Matrix Used: IAEA Def.

Comment # 9926: CNA I Nuclear Power Plant

Atucha I Nuclear power plant (PHWR type) has an installed power capacity of 357 MW(e).

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	97.450	97.450	100.00	0.00	0.00	0.00	0.00	0.00	0.00
LILW-SL	Storage	Y	N	261.800	261.800	100.00	0.00	0.00	0.00	0.00	0.00	0.00

Processing - Treatment method(s)

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

Site (Data) : CNA I

Stock of waste as at December 2008

Country: ARGENTINA

Reporting Year: 2008

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) : CNE

Country: ARGENTINA

Reporting Year: 2008

Full Name: CENTRAL NUCLEAR EMBALSE
EMBALSE NUCLEAR POWER PLANT

Description:

Official Website:

License Holder(s): RICARDO SAINZ
Since 10/11/2006

Comment # 9931: CNE Nuclear Power Plant

Embalse Nuclear Power Plant (Candu type reactor) has an installed power capacity of 648 MW(e).

Waste management facilities that are located at this site:

Facility:	COMPACTOR													
Description:	There is an area in the reactor building controlled zone housing with a 16-ton capacity hydraulic press.													
<p>Processing part of facility COMPACTOR</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>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	LILW-SL	Yes	Yes	LILW-LL	No	No	HLW	No	No
Waste Class	Actual	Planned												
LILW-SL	Yes	Yes												
LILW-LL	No	No												
HLW	No	No												
Type:	Treatment													
Year opened:	1984													

Site (Structure) : CNE

Country: ARGENTINA

Reporting Year: 2008

Facility:	DRUMS
Description:	This facility located inside Embalse nuclear power plant is used to store 200 liters drums.

Storage part of facility DRUMS

The following shows storage status for waste classes and SRS.

Waste Class	Actual	Planned
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?
DRUMS	building	1995	No	No	No	No

Comment **# 9933: Storage Facility DRUMS**

Treatment and conditioning practices, such as compacting of solid compactable wastes and immobilization in cement matrixes of non-compactable solids are performed at Embalse Nuclear Power Plant.

Site (Structure) : CNE

Country: ARGENTINA

Reporting Year: 2008

Facility:	FILTERS
Description:	Storage for the spent filters generated in the nuclear power plant along the whole life cycle.

Storage part of facility**FILTERS**

The following shows storage status for waste classes and SRS.

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

List SRS?	No
List UMMT?	No

Capacity:	The storage facility for purification filters is located in an approximately 50 m x 50 m elevated area located some 250 meters from the service building.
------------------	---

Types of Storage Units

Storage Unit Name	Type Name	Year Opened	Closed?	Full?	Modular?	Contains SRS?
FILTERS	building	1984	No	No	No	No

Comment **# 9938: Storage Facility FILTERS**

Underground containment structures include concrete cubicles and cylindrical pits with steel lined concrete walls. The drainage characteristics of the elevated facility are such that the level of the lowest points of the storage cubicles are above the estimated highest level of the groundwater table.

Concrete storage cubicles are divided into separate cells where low-level wastes are stored. Cylindrical vertical cavities (i.e., boreholes) are used to store intermediate-level waste purification mechanical filters.

The original design comprises a concrete cubicle made of five aligned cells with a depth of 3 m and a cross section of 3 m x 3 m, and five concrete cylindrical pits with a diameter of 1 m and a depth of 4.4 m. The capacity is adequate to contain all solid radioactive wastes produced during the power plant useful life. Nevertheless, the facility allows expansion of the concrete containment structures to store all solid radioactive wastes that could be additionally generated.

Site (Structure) : CNE

Country: ARGENTINA

Reporting Year: 2008

Facility:	RESINS
Description:	Spent ion exchange resin beds are stored in tanks.

Storage part of facility RESINS

The following shows storage status for waste classes and SRS.

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

List SRS?	No
List UMMT?	No

Capacity:	There are two tanks of 260 m3 each one.
------------------	---

Types of Storage Units

Storage Unit Name	Type Name	Year Opened	Closed?	Full?	Modular?	Contains SRS?
RESINS	tank (concrete)	1984	No	No	Yes	No

Comment **# 9934: Storage Facility RESINS**

At CNE, liquid radioactive waste originating in the operation and maintenance activities are treated by ion exchange resin beds, with subsequent discharge into the environment of the treated effluent.

Site (Data) : CNE

Stock of waste as at December 2008

Country: ARGENTINA

Reporting Year: 2008

Site Name: CNEFull Name: CENTRAL NUCLEAR EMBALSE
EMBALSE NUCLEAR POWER PLANT

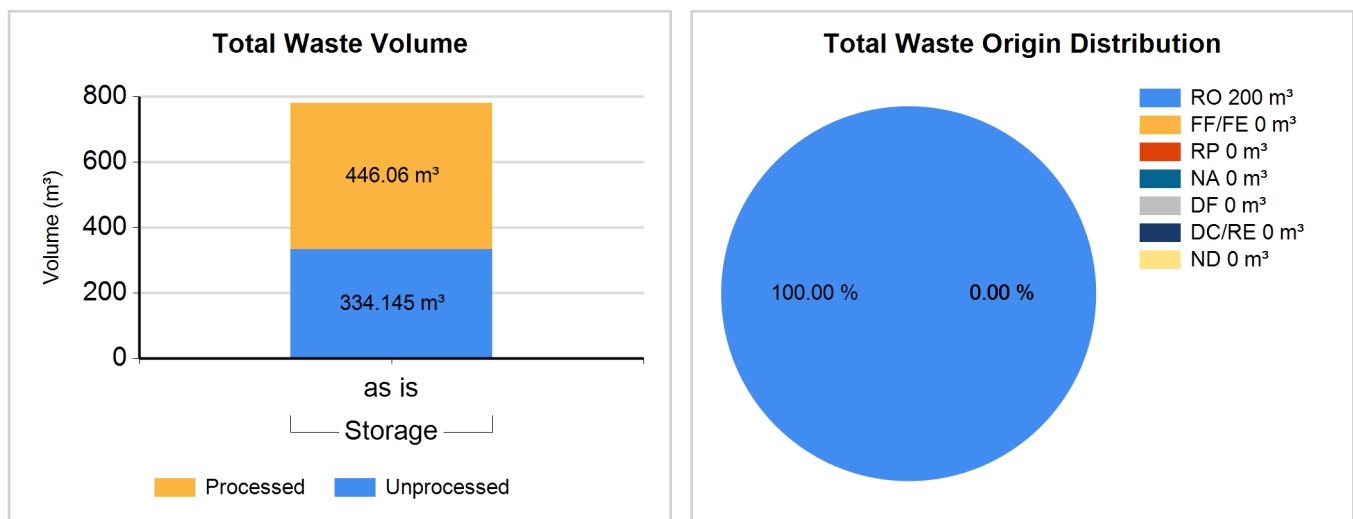
Inventory Reporting Date: December 2008 Waste Matrix Used: IAEA Def.

Comment # 9931: CNE Nuclear Power Plant

Embalse Nuclear Power Plant (Candu type reactor) has an installed power capacity of 648 MW(e).

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	334.145	334.145	100.00	0.00	0.00	0.00	0.00	0.00	0.00
LILW-SL	Storage	Y	N	446.060	446.060	100.00	0.00	0.00	0.00	0.00	0.00	0.00

Processing - Treatment method(s)

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

Country: ARGENTINA

Reporting Year: 2008

Name:	ARN
Full Name:	Autoridad Regulatoria Nuclear. (Nuclear Regulatory Authority).
Divison:	
City or Town:	Buenos Aires
Main Website:	

Regulations / Laws

Country: ARGENTINA

Reporting Year: 2008

Name:	LNAN		
Title or Name:	LEY NACIONAL DE ACTIVIDAD NUCLEAR (National Law of Nuclear Activity)		
Reference Number:	24804		
Date Promulgated or Proclaimed:	4/23/1997	Law	

Comment # 301: National Law of Nuclear Activity

Act N° 24804 establishes that the Nuclear Regulatory Authority (ARN) is in charge of nuclear regulations and control concerning radiological and nuclear safety, safeguards and physical protection, giving in addition, advice to the Executive Power on subjects of its competence. It appoints the National Commission of Atomic Energy - independent from the Regulatory Body - as the responsible organization for radioactive waste management in the country.

Attachment #149: Regulation

LNAN.doc

This document contains the text of the National Law of Nuclear Activity (Spanish version) for Argentina.

Name:	RGRR		
Title or Name:	REGIMEN DE GESTION DE RESIDUOS RADIOACTIVOS (Radioactive Waste Management Regimen).		
Reference Number:	25018		
Date Promulgated or Proclaimed:	10/19/1998	Law	

Comment # 302: National Law of Radioactive Waste Management

Act N° 25018 creates the National Radioactive Waste Management Programme, belonging to the Atomic Energy Commission. This programme deals with the treatment, conditioning, storage, transport and disposal of low, medium and high level radioactive waste, as well as the development and implementation of all mechanisms required to attain their objectives.

Attachment #150: Regulation

RGRR.doc

This document contains the text of the National Law of Radioactive Waste Management Regimen for Argentina (Spanish Version) .

Name:	AR 10.12.1		
Title or Name:	Gestion de Residuos Radiactivos. (Radioactive Waste Management)		
Reference Number:	ARN 29/99		
Date Promulgated or Proclaimed:	12/1/1999	Regulation	

Attachment #147: Regulation

10-12-1R0.pdf

The objective of this document is to establish general requirements for the management of radioactive wastes, taking into account the protection of human health and the environment for both present and future generations.

Future Outlook

Country: ARGENTINA

Reporting Year: 2008

Data not available.

Policies

Country: ARGENTINA

Reporting Year: 2008

National Systems

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

Attachment #831: Questionnaire

Estructura Orgánica del PROGRAMA NACIONAL DE GESTION DE.doc

The framework of the Radioactive Waste Management National Program was established by the Atomic Energy Commission on 2003-02-27, according to the National Law # 25018.

The spanish version of the resolution can be seen in the attachment.

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

Comment # 7269: Strategic Plan

According to the specific Law 25018, National Atomic Energy Commission developed a Radioactive Waste Management Strategic Plan, which was submitted to the approval of the National Congress.

The Plan recommends the course of action for the safe management of low, intermediate and high level radioactive wastes produced in the performance of practices and those generated from uranium millings, decontamination and decommissioning of nuclear and radioactive facilities. The Plan also evaluates the necessary funds to fulfill with the programmed actions.

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	Partially
Q25 implemented formal mechanisms for disseminating information to the public and for public consultation	No

Policies

Country: ARGENTINA

Reporting Year: 2008

Responsibilities		(Complete;Incomplete)
Q28	establish and implement a legal framework for the management of radioactive waste	Complete
Q29	establish or designate a regulatory body that has the responsibility for carrying out the regulatory function with regard to safety and the protection of human health and the environment.	Complete
Q30	define the responsibilities of waste generators and operators of waste management facilities	Complete
Q31	provide for adequate resources	Incomplete
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

Comment # 7270: Responsibilities

The responsibilities of waste generators and operators of waste management facilities have been established by the Nuclear Regulatory Authority on AR.10.12.1. regulation.

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

Clearance		(Yes;No)
Q128	Does your country have "clearly defined clearance levels based on radiological criteria, with policy statements that material below those levels can be recycled or disposed of with non-radioactive wastes"?	No
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)?	No

Policies

Country: ARGENTINA

Reporting Year: 2008

Disposal Facilities

Licensing		(Yes - All;Yes - Some;No)
Q53	Environmental Assessment (EA)	Yes - Some
Q54	Environmental Impact Statement (EIS)	Yes - Some
Q55	Performance Assessment (PA)	Yes - Some
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 - Some
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)	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

Policies

Country: ARGENTINA

Reporting Year: 2008

Processing/Storage

Policies/Procedures		(Yes;No)
Q73	waste sorting/segregation	Yes
Q74	waste minimization	Yes
Q75	waste storage	Yes
Q76	processing and/or storing and/or disposing of nuclear fuel cycle waste separately from non-nuclear fuel cycle waste (also known as nuclear applications waste)	No
Q78	Does your country have any legislation, regulation, or policy that waste processing must take place prior to storage (see following note)	No
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?	Yes
Q82	In your Country are there any mobile waste processing facilities?	No
Foreign		(Yes;No)
Q121	Has your country sent any wastes or spent fuel to another country for processing (reprocessing for fuel)?	No
Q124	Has your country accepted any wastes or spent fuel from another country for processing (reprocessing for fuel)?	No

Policies

Country: ARGENTINA

Reporting Year: 2008

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)?	No
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

Comment # 308: Radioactive waste import

National Constitution or Fundamental Law forbids to import radioactive wastes.

National Law of dangerous wastes prohibits to import radioactive wastes and remits to the specific legislation

Spent Fuel		(Yes;No)
Q105	Does your Country have laws or Regulations restricting either the import or export of spent fuel?	No

Policies

Country: ARGENTINA

Reporting Year: 2008

Liquid HLW**Storage****(Yes;No)**

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

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
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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
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Q113	Does your Country require a time frame for the decommissioning of non-nuclear fuel cycle facilities once these facilities cease operation?	Yes - Some
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Comment **# 7258: Decommission Comments**

Only major facilities require a timeframe for decommissioning. Considering major facilities those that manage important inventory of radioactive material.

Future Outlook

Country: ARGENTINA

Reporting Year: 2008

Data not available.

Future Outlook

Country: ARGENTINA

Reporting Year: 2008

Data not available.

Future Outlook

Country: ARGENTINA

Reporting Year: 2008

Data not available.

Future Outlook

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