Country Waste Profile Report for

ARGENTINA

Reporting Year: 2009

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

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

For further information, please contact the Responsible Officer via e-mail:
NEWMDB@IAEA.org

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Waste Classification Schemes

Country: ARGENTINA Reporting Year: 2009

Waste Class Matrix: **IAEA Def.** This country does use the IAEA Scheme: No

Description: The Agency's standard matrix

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

Comment **# 23077: Clasificación de Residuos**

Considerando que el sistema de clasificación utilizado hasta este momento no contemplaba todos los tipos de residuos radiactivos generados en el país, resultando incluso en algunas ocasiones dificultoso relacionarlo con otros esquemas de clasificación utilizados internacionalmente, se ha adoptado como sistema de clasificación el nuevo esquema propuesto por el Organismo Internacional de Energía Atómica, que contempla seis clases de residuos radiactivos, basados básicamente en consideraciones de seguridad a largo plazo, y por lo tanto, implicando la disposición de los residuos.

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

This country uses the following definitions:

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

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Groups Overview

Country: ARGENTINA Reporting Year: 2009

Reporting Group:	**RG1**
Inventory Reporting Date:	December 2009
Waste Matrix Used:	IAEA Def.
Description:	Este grupo informa acerca de los residuos radiactivos gestionados en el Area de Gestión Ezeiza (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	

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Groups Overview

Country: ARGENTINA Reporting Year: 2009

Reporting Group:	**RG2**
Inventory Reporting Date:	December 2009
Waste Matrix Used:	IAEA Def.
Description:	Este grupo informa acerca de los residuos radiactivos almacenados en las dos centrales nucleares argentinas CNA I y 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**

La operación de las centrales nucleares es responsabilidad de Nucleoeléctrica Argentina S.A. (NASA). Ambas centrales funcionan con combustibles de uranio natural y como refrigerante y moderador utilizan agua pesada.

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Site (Structure) : AGE

Country: ARGENTINA Reporting Year: 2009

Full Name: AREA DE GESTION DE RESIDUOS RADIACTIVOS EZEIZA.

License Holder(s): PEDRO SOTO
e-mail: psoto@cae.cnea.gov.ar
Telephone: (54-11) 6779-8534
Fax: (54-11) 6779-8535

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

Facility:	**COMPACTOR**
Description:	Esta instalación se utiliza para compactar residuos sólidos compactables en tambores de 200 litros. Una prensa hidráulica de 16 ton. es la que se usa para realizar el trabajo de compactación.

Processing part of facility **COMPACTOR**

The following shows processing status for waste classes and SRS.

Waste CLass	Actual	Planned
VLLW	No	No
LLW	Yes	Yes
ILW	No	No
HLW	No	No

Type:	Treatment, Conditioning
Year opened:	1973

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Site (Structure) : AGE

Country: ARGENTINA Reporting Year: 2009

Facility:	**CP**
Description:	Pozo de concreto. Esta instalación esta considerada como una alternativa para la gestión de residuos sólidos de gran tamaño que por su geometría no pueden ser dispuestos en las trincheras existentes. Allí pueden encontrarse residuos históricos

Disposal part of facility **CP**

The following shows disposal status for waste classes and SRS.

Waste Class	Actual	Planned
VLLW	No	No
LLW	Yes	No
ILW	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)

Phase Name	Start Year	End Year	Estimate
design	1968	1970	True
construction	1968	1971	True
commissioning	1968	1972	True
operation	1969	2001	False

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Site (Structure) : AGE

Country: ARGENTINA Reporting Year: 2009

Facility:	**DS**
Description:	Los tambores de 200 litros conteniendo residuos provenientes de las centrales nucleares que no pudieron ser dispuestos en el sistema LLSWT han sido almacenados en contenedores maritimos.

Storage part of facility **DS**

The following shows storage status for waste classes and SRS.

Waste Class	Actual	Planned
VLLW	No	No
LLW	Yes	Yes
ILW	No	No
HLW	No	No

List SRS?	No
List UMMT?	No

Capacity:	

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Site (Structure) : AGE

Country: ARGENTINA Reporting Year: 2009

Facility:	**ID**
Description:	La instalación de Descontaminación se construyó dentro de otra ya existente usando mampostería y estructuras de concreto reforzado. Se emplea para descontaminar piezas pequeñas.

Processing part of facility **ID**

The following shows processing status for waste classes and SRS.

Waste CLass	Actual	Planned
VLLW	No	No
LLW	Yes	Yes
ILW	No	No
HLW	No	No

Type:	Treatment
Year opened:	2000

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Site (Structure) : AGE

Country: ARGENTINA Reporting Year: 2009

Facility:	**IRWS**
Description:	Infected Radioactive Waste Storage. Es una nueva instalación licenciada en 2004 para almacenar contenedores de 50 litros conteniendo residuos infecto radiactivos.

Storage part of facility **IRWS**

The following shows storage status for waste classes and SRS.

Waste Class	Actual	Planned
VLLW	No	No
LLW	Yes	Yes
ILW	No	No
HLW	No	No

List SRS?	No
List UMMT?	No

Capacity:	Posee una capacidad aproximada de 200 m3.

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Site (Structure) : AGE

Country: ARGENTINA Reporting Year: 2009

Facility:	**LLLWT**
Description:	Existen tres trincheras de semi-contención para residuos líquidos de bajo nivel. Esta instalación se diseñó para residuos líquidos de muy bajo nivel de actividad que no eran susceptibles de ser descargados como efluentes.

Disposal part of facility **LLLWT**

The following shows disposal status for waste classes and SRS.

Waste Class	Actual	Planned
VLLW	No	No
LLW	Yes	No
ILW	No	No
HLW	No	No

List SRS?	No
List UMMT?	No

Type:	engineered surface		
Facility is modular?	Yes		
Capacity existing (m3):	1200	Capacity planned (m3):	1200
Depth (m):	3	Host medium:	sedimentary (other)

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**

El sistema comprende tres lechos de intercambio iónico formados por mezclas de suelos seleccionados con mayor proporción calcárea y de arenisca con agregado de arena para mejorar la eficiencia del proceso. Estos suelos permiten que los radionucleidos de período de semidesintegracion muy cortos decaigan a niveles de actividad no significativos durante su permanencia en la masa del lecho. La capacidad operativa de cada uno de estos sistemas es de aproximadamente 2 m3 . Una red interconectada de freatímetros permite llevar a cabo un control periódico del agua subterránea. El sistema entró en operación en 1971. Dos unidades finalizaron sus operaciones en 1986, mientras que la tercera funcionó hasta 2001 cuando comenzó una re-evaluación de seguridad de todo el AGE. Considerando que el licenciamiento de este sistema data de 1995, todos los residuos líquidos dispuestos hasta esa fecha son considerados históricos.

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Site (Structure) : AGE

Country: ARGENTINA Reporting Year: 2009

Facility:	**LLSWT**
Description:	La Trinchera N°1 (700 m3) fue cerrada en 1988 con residuos históricos en su interior. La Trinchera N°2 (1120 m3) ha operado desde 1988. Se la ha licenciado para disponer residuos acondicionados en tamboes de 200 litros

Disposal part of facility **LLSWT**

The following shows disposal status for waste classes and SRS.

Waste Class	Actual	Planned
VLLW	No	No
LLW	Yes	No
ILW	No	No
HLW	No	No

List SRS?	No
List UMMT?	No

Type:	engineered surface		
Facility is modular?	Yes		
Capacity existing (m3):	1820	Capacity planned (m3):	1820
Depth (m):	1.2	Host medium:	sedimentary (other)

Phase Name	Start Year	End Year	Estimate
design	1974	1988	False
construction	1974	1988	False
commissioning	1974	1988	False
operation	1975	0	False
EVENT: operation suspended	2001	0	False

Comment **# 7183: LLSWT**

La primera trinchera fue construida en suelo natural sin ninguna mejora de ingeniería. La segunda trinchera se puso operativa en 1989 y sólo un tercio de su capacidad total está cubierta, se licenció en 1995, y por esta razón todos los desechos dispuestos hasta ese año son considerados históricos. La segunda trinchera fue construida en un suelo seleccionado de carácter calcáreo y de arenisca compactado al 98% de su valor máximo teórico, sosteniendo un lecho de cascote nivelado con pendiente hacia ambos lados y paredes perimetrales de 30 cm de espesor a modo de contención. El sistema de desagüe pluvial previene de la acumulación de agua de lluvia alrededor de la base de los tambores. La cobertura de la última sección de la primera trinchera así como también el del primer tercio de la segunda fue realizada usando el mismo concepto ingenieril. Las operaciones en la Trinchera N°2 han sido formalmente suspendidas desde 2001, luego de tres años de no haber colocado tambores en ella. Actualmente, se está llevando a cabo una re-evaluación de seguridad de la instalación.

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Site (Structure) : AGE

Country: ARGENTINA Reporting Year: 2009

Facility:	**M1**
Description:	Esta instalación se utiliza para almacenar residuos radiactivos sólidos de nivel medio y bajo acondicionados en tambores de 200 litros, así como fuentes de radiación decaídas (SRS).

Storage part of facility **M1**

The following shows storage status for waste classes and SRS.

Waste Class	Actual	Planned
VLLW	No	No
LLW	Yes	Yes
ILW	Yes	Yes
HLW	No	No

List SRS?	Yes
List UMMT?	No

Capacity:	Esta instalación se licenció en 1999. Tiene 60m de longitud, 20m de ancho y 10m de altura. El edificio cuenta con una grúa móvil con un gancho primario de 3 ton., uno secundario de 2 ton. y un sistema de ventilación controlada.

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Site (Structure) : AGE

Country: ARGENTINA Reporting Year: 2009

Facility:	**TN**
Description:	La playa de recepción y maniobras fue concebida para la recepción de diferentes tipos de desechos. La playa comprende una plataforma de concreto reforzado de alrededor de 800 m2 cubierto por un tinglado parabólico, cercado por ladrillo o paredes metálica
Waste Packages:	Esta instalación se utiliza para almacenar residuos radiactivos líquidos (orgánicos acuosos, aceites) y sólidos húmedos (resinas, barros) generados en el Centro Atómico Ezeiza en contenedores adecuados.

Storage part of facility **TN**

The following shows storage status for waste classes and SRS.

Waste Class	Actual	Planned
VLLW	No	No
LLW	Yes	Yes
ILW	Yes	Yes
HLW	No	No

List SRS?	No
List UMMT?	No

Capacity:	La playa fue licenciada en 1994. Hoy en día, se utiliza también como un almacenamiento temporario.

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Country: ARGENTINA Reporting Year: 2009

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Site (Data) : AGE

Stock of waste as at December 2009

Country: ARGENTINA Reporting Year: 2009

Site Name: **AGE**

Full Name: AREA DE GESTION DE RESIDUOS RADIACTIVOS EZEIZA.

Inventory Reporting Date: December 2009 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

Waste Class: **LLW**

Waste Class Name	Location / Facility	Proc	Est.	Volume (m³)	RO %	FF/FE %	RP %	NA %	DF %	DC/RE %	ND %
LLW	Storage	N	Y	215.050	8.00	42.00	0.00	50.00	0.00	0.00	0.00
LLW	Storage	Y	Y	301.800	41.00	32.00	0.00	27.00	0.00	0.00	0.00
LLW	Disposal	Y	Y	2754.700	68.00	1.00	0.00	31.00	0.00	0.00	0.00

Waste Class: **ILW**

Waste Class Name	Location / Facility	Proc	Est.	Volume (m³)	RO %	FF/FE %	RP %	NA %	DF %	DC/RE %	ND %
ILW	Storage	N	Y	4.300	0.00	28.00	0.00	72.00	0.00	0.00	0.00
ILW	Storage	Y	Y	23.000	0.00	43.00	0.00	57.00	0.00	0.00	0.00
ILW	Disposal	Y	Y	169.600	2.00	46.00	13.00	39.00	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
Radionuclide Separation	N	N	Same	N
Solvent Extraction	Y	N		N

Processing - Conditioning method(s)

Spent Sources <=30 years in Storage

Nuclide	Number of Sources/Total Activity of Sources (GBq)			Status				
	Group I less than or equal 4GBq	Group II m ore than 4GBq but less than or equal 4E+4GBq	Group III more than 4E+4GBqq	cond	uncond	cat	Total Activity for all Groups (GBq)	Decay Date
	num/activity	num/activity	num/activity					
Cf-252	9			N	Y	Y	1.000E-001	2009.12
	1.000E-001							
Cf-252	1			N	Y	Y	1.200E+000	2009.12
	1.200E+000							

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Site (Data) : AGE

Stock of waste as at December 2009

Country: ARGENTINA Reporting Year: 2009

Co-60		115		N	Y	Y	4.700E+005	2009.12
		4.700E+005						
Co-60		6		N	Y	Y	2.980E+002	2009.12
		2.980E+002						
Co-60		6	11	N	Y	Y	1.017E+006	2009.12
		1.490E+005	8.680E+005					
Co-60	43			Y	N	Y	2.000E-001	2009.12
	2.000E-001							
Co-60	214	25		N	Y	Y	2.070E+005	2009.12
	8.900E+000	2.070E+005						
Co-60	24	4		N	Y	Y	5.630E+001	2009.12
	1.680E+001	3.950E+001						
Cs-137	40			Y	N	Y	1.100E+001	2009.12
	1.100E+001							
Cs-137	157	158		N	Y	Y	3.730E+003	2009.12
	5.960E+001	3.670E+003						
Cs-137	64	45		Y	N	Y	1.125E+003	2009.12
	1.170E+002	1.008E+003						
Cs-137	354			N	Y	Y	6.730E+001	2009.12
	6.730E+001							
Cs-137	2			Y	N	Y	7.900E+000	2009.12
	7.900E+000							
Cs-137		7		N	Y	Y	1.170E+003	2009.12
		1.170E+003						
Cs-137		6		N	Y	Y	1.270E+005	2009.12
		1.270E+005						
Cs-137			1	N	Y	Y	1.760E+005	2009.12
			1.760E+005					
Fe-55	20			N	Y	Y	4.400E+000	2009.12
	4.400E+000							

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Site (Data) : AGE

Stock of waste as at December 2009

Country: ARGENTINA Reporting Year: 2009

H-3	19	2		N	Y	Y	1.802E+004	2009.12
	2.490E+001	1.800E+004						
Kr-85	66	52		N	Y	Y	8.895E+003	2009.12
	4.480E+001	8.851E+003						
Pm-147	4			Y	N	Y	6.000E-001	2009.12
	6.000E-001							
Pm-147	19			N	Y	Y	5.600E+000	2009.12
	5.600E+000							
Sr-90		1		N	Y	Y	1.270E+003	2009.02
		1.270E+003						
Sr-90	121	3		N	Y	Y	2.900E+001	2009.12
	7.500E+000	2.150E+001						
Sr-90		4		N	Y	Y	2.733E+002	2009.12
		2.733E+002						

Spent Sources > 30 years in Storage

Nuclide	Number of Sources/Total Activity of Sources (GBq)		cond	uncond	cat	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	21	36	N	Y	Y	5.605E+002	2009.12
	3.450E+001	5.260E+002					
Am-241		1	N	Y	Y	1.100E+002	2009.12
		1.100E+002					
Am-241		3	Y	N	Y	9.400E+002	2009.12
		9.400E+002					
Am-241		7	Y	N	Y	1.300E+002	2009.12
		1.300E+002					
Am-241	22		Y	N	Y	4.000E-001	2009.12
	4.000E-001						

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Site (Data) : AGE

Stock of waste as at December 2009

Country: ARGENTINA Reporting Year: 2009

Am-241		2	N	Y	Y	2.500E+003	2009.12
		2.500E+003					
Am-241		17	N	Y	Y	2.600E+003	2009.12
		2.600E+003					
Am-241		170	N	Y	Y	1.313E+003	2009.12
		1.313E+003					
Am-241	3246		N	Y	Y	6.401E+003	2009.12
	6.401E+003						
Ni-63	70	12	N	Y	Y	9.210E+001	2009.12
	3.010E+001	6.200E+001					
Pu-238	1		N	Y	Y	9.000E-001	2009.12
	9.000E-001						
Pu-238		1	N	Y	Y	6.960E+001	2009.02
		6.960E+001					
Ra-226	731		Y	N	Y	2.300E+002	2009.02
	2.300E+002						
Ra-226	84		Y	N	Y	8.200E+000	2009.12
	8.200E+000						
Ra-226	97		N	Y	Y	5.500E+001	2009.12
	5.500E+001						
Ra-226	83		N	Y	Y	2.600E+000	2008.12
	2.600E+000						

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Site (Structure) : CNA I

Country: ARGENTINA Reporting Year: 2009

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

License Holder(s): OSVALDO PENNACCHIETTI
Since October 2005

Comment **# 9926: Central Nuclear Atucha I (CNA I)**

La Central Nuclear Atucha I (tipo PHWR) tiene una capacidad de 357 MW(e).

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

Facility:	**CEMENT**
Description:	El fin de esta instalación es el de inmovilizar por cementación el concentrado del evaporador, los barros generados en la limpieza de tanques, desechos líquidos de descontaminación y desechos estructurales y sólidos no compactables.

Processing part of facility **CEMENT**

The following shows processing status for waste classes and SRS.

Waste CLass	Actual	Planned
VLLW	No	No
LLW	Yes	Yes
ILW	No	No
HLW	No	No

Type:	Conditioning
Year opened:	1992

Comment **# 9937: CEMENTACIÒN**

Esta instalación fue diseñada solamente para desechos de baja actividad. Incluye tanque de almacenamiento y alimentación, Así como también un sistema de muestreo y homogeneizacion de líquidos y barros a ser cementados. El sistema de inmovilizacion comprende una mezcladora vertical de palas re-utilizables que permite la cementación dentro de los tambores.

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Site (Structure) : CNA I

Country: ARGENTINA Reporting Year: 2009

Facility:	**COMPACTOR**
Description:	El sistema de compactación consta de una prensa hidráulica de 16 t, instalada en zona controlada dentro del edificio del reactor. Los desechos compactables son recolectados en bolsas plasticas y compactados dentro de tambores de 200 litros.

Processing part of facility **COMPACTOR**

The following shows processing status for waste classes and SRS.

Waste CLass	Actual	Planned
VLLW	No	No
LLW	Yes	Yes
ILW	No	No
HLW	No	No

Type:	Treatment, Conditioning
Year opened:	1974

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Site (Structure) : CNA I

Country: ARGENTINA Reporting Year: 2009

Facility:	**DRUMS**
Description:	Esta instalación emplazada en Atucha I es utilizada para almacenar los tambores de 200 litros con residuos sólidos y líquidos de baja actividad tratados y acondicionados.

Storage part of facility **DRUMS**

The following shows storage status for waste classes and SRS.

Waste Class	Actual	Planned
VLLW	No	No
LLW	Yes	Yes
ILW	No	No
HLW	No	No

List SRS?	No
List UMMT?	No

Capacity:	

Comment **# 9932: ALMACENAMIENTO DE TAMBORES**

Los siguientes tipos de residuos son almacenados en esta instalaciòn: a) Concentrados y barros generados en la limpieza de tanques se inmovilizan en matrices cementiceas y acondicionados en tambores e 200 litros. b) El tratamiento de solidos radiactivos compactables producidos durante la operación y por actividades de mantenimiento consiste en reducir el volumen de los desechos comprimiendolos dentro de tambores de 200 litros. c) Los residuos sólidos no compactables son inmovilizados en matrices de cemento y acondicionados dentro de tambores de 200 litros.

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Site (Structure) : CNA I

Country: ARGENTINA Reporting Year: 2009

Facility:	**EVAPORATOR**
Description:	Un sistema separador / decantador es utlizado para separar aguas residuales de solidos suspendidos en el líquido. El sistema realiza los controles necesarios para traspasar las aguas residuales al sistema de descarga o al sistema de concentración por evap

Processing part of facility **EVAPORATOR**

The following shows processing status for waste classes and SRS.

Waste CLass	Actual	Planned
VLLW	No	No
LLW	Yes	Yes
ILW	No	No
HLW	No	No

Type:	Treatment
Year opened:	1974

Comment **# 9936: EVAPORADOR**

El agua purificada es recolectada en tanques de control donde se mide la concentracion de su actividad. Si el valor es inferior a los limites establecidos en la licencia de Operaciones, el líquido es descargado como efluente en el río Paraná de las Palmas. De lo contrario, el agua reingresa al sistema para ser tratada por evaporación.

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Site (Structure) : CNA I

Country: ARGENTINA Reporting Year: 2009

Facility:	**FILTERS**
Description:	Es un emplazamiento subterráneo utilizado para almacenar filtros mecánicos gastados.

Storage part of facility **FILTERS**

The following shows storage status for waste classes and SRS.

Waste Class	Actual	Planned
VLLW	No	No
LLW	Yes	Yes
ILW	No	No
HLW	No	No

List SRS?	No
List UMMT?	No

Capacity:	Son 8 pozos de 3 m^3 cada uno.

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Site (Structure) : CNA I

Country: ARGENTINA Reporting Year: 2009

Facility:	**RESINS 1**
Description:	Los lechos de resinas de intercambio iónico agotadas del sistema primario de purificación del agua de enfriamiento se almacenan en tanques dentro de Atucha I.

Storage part of facility **RESINS 1**

The following shows storage status for waste classes and SRS.

Waste Class	Actual	Planned
VLLW	No	No
LLW	Yes	Yes
ILW	No	No
HLW	No	No

List SRS?	No
List UMMT?	No

Capacity:	Son 4 tanques, 2 de 15 m3 y 2 de 9 m3.

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Site (Structure) : CNA I

Country: ARGENTINA Reporting Year: 2009

Facility:	**RESINS 2**
Description:	Esta instalación se ha utilizado para liberar los tanques con lechos de resinas agotadas.

Storage part of facility **RESINS 2**

The following shows storage status for waste classes and SRS.

Waste Class	Actual	Planned
VLLW	No	No
LLW	Yes	Yes
ILW	No	No
HLW	No	No

List SRS?	No
List UMMT?	No

Capacity:	Esta instalación tiene una capacidad de 46 m3

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Site (Structure) : CNA I

Country: ARGENTINA Reporting Year: 2009

Facility:	**TR SYSTEM**
Description:	La función de este sistema es el de recolectar todas las aguas residuales generadas en area controlada . El sistema incluye cuatro tanques de 10 m3 emplazados en el edificio del reactor.

Processing part of facility **TR SYSTEM**

The following shows processing status for waste classes and SRS.

Waste CLass	Actual	Planned
VLLW	No	No
LLW	Yes	Yes
ILW	No	No
HLW	No	No

Type:	Treatment
Year opened:	1974

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Site (Structure) : CNA I

Country: ARGENTINA Reporting Year: 2009

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Site (Data) : CNA I

Stock of waste as at December 2009

Country: ARGENTINA Reporting Year: 2009

Site Name: **CNA I**

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

Inventory Reporting Date: December 2009 Waste Matrix Used: IAEA Def.

Comment **# 9926: Central Nuclear Atucha I (CNA I)**

La Central Nuclear Atucha I (tipo PHWR) tiene una capacidad de 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

Waste Class: **LLW**

Waste Class Name	Location / Facility	Proc	Est.	Volume (m³)	RO %	FF/FE %	RP %	NA %	DF %	DC/RE %	ND %
LLW	Storage	N	N	97.450	100.00	0.00	0.00	0.00	0.00	0.00	0.00
LLW	Storage	Y	N	261.800	100.00	0.00	0.00	0.00	0.00	0.00	0.00

Processing - Treatment method(s)

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

Processing - Conditioning method(s)

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

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Site (Structure) : CNE

Country: ARGENTINA Reporting Year: 2009

Full Name: CENTRAL NUCLEAR EMBALSE
EMBALSE NUCLEAR POWER PLANT

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

Comment **# 9931: Central Nuclear Embalse (CNE)**

La Central Nuclear Embalse (reactor tipo Candu) tiene una capacidad de producción de potencia instalada de 648 MW(e).

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

Facility:	**COMPACTOR**
Description:	Existe un área dentro de la zona controlada del edificio del reactor que cuenta con una prensa de 16 t de capacidad.

Processing part of facility **COMPACTOR**

The following shows processing status for waste classes and SRS.

Waste CLass	Actual	Planned
VLLW	No	No
LLW	Yes	Yes
ILW	No	No
HLW	No	No

Type:	Treatment
Year opened:	1984

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Site (Structure) : CNE

Country: ARGENTINA Reporting Year: 2009

Facility:	**DRUMS**
Description:	Esta instalación emplazada dentro de la central nuclear Embalse se utiliza para almacenar tambores de 200 litros.

Storage part of facility **DRUMS**

The following shows storage status for waste classes and SRS.

Waste Class	Actual	Planned
VLLW	No	No
LLW	Yes	Yes
ILW	No	No
HLW	No	No

List SRS?	No
List UMMT?	No

Capacity:	

Comment **# 9933: ALMACENAMIENTO DE TAMBORES**

Practicas de acondicionamiento y tratamiento, tales como la compactación de sólidos compactables e inmovilización en matrices cementicieas de sólidos no compactables se llevan a cabo en la central nuclear Embalse.

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Site (Structure) : CNE

Country: ARGENTINA Reporting Year: 2009

Facility:	**FILTERS**
Description:	Almacenamiento de filtros gastados durante todo el ciclo productivo en la central.

Storage part of facility **FILTERS**

The following shows storage status for waste classes and SRS.

Waste Class	Actual	Planned
VLLW	No	No
LLW	Yes	Yes
ILW	No	No
HLW	No	No

List SRS?	No
List UMMT?	No

Capacity:	La instalación de almacenamiento para los filtros de purificación es un area de aproximadamente 50m x 50m elevada ubicada a 250 metros del edificio de servicios.

Comment **# 9938: ALMACENAMIENTO DE FILTROS**

Las estructuras de contención subterráneas incluyen cubículos de concreto y pozos cilíndricos con paredes de concreto revestidas en acero. La característica del drenage es tal que el punto más bajo de las estructuras está más elevado que el punto más alto de las aguas provenientes de las napas. Los cubículos de concreto para almacenamiento estan divididos en celdas separadas donde se encuentran los residuos de baja actividad. Cavidades cilíndricas y verticales se usan para almacenar los filtros de residuos de media actividad. El diseño original comprende un cubículo de concreto formado por cinco celdas alineadas de 3 metros de profundidad y 9 metros cuadrados de sección trasversal y cinco pozos cilindricos de concreto con un diámetro de 1 metro y 4.4 metros de profundidad. Su capacidad es adecuada para almacenar todos los residuos sólidos radiactivos generados a lo largo de la vida util de la central. Sin embargo, la instalación permite la expansión de las estructuras de contención de concreto para almacenar todos los residuos sólidos que se produjeren adicionalmente.

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Site (Structure) : CNE

Country: ARGENTINA Reporting Year: 2009

Facility:	**RESINS**
Description:	Los lechos de resinas de intercambio iónico agotadas son almacenados en tanques

Storage part of facility **RESINS**

The following shows storage status for waste classes and SRS.

Waste Class	Actual	Planned
VLLW	No	No
LLW	Yes	Yes
ILW	No	No
HLW	No	No

List SRS?	No
List UMMT?	No

Capacity:	Son dos tanques de 260 m3 cada uno.

Comment **# 9934: ALMACENAMIENTO DE RESINAS**

En CNE, los desechos radiactivos líquidos generados durante la operación o actividades de mantenimiento son tratados mediante lechos de resinas de intercambio iónico, con su subsecuente descarga de los efluentes tratados al medio ambiente.

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Site (Structure) : CNE

Country: ARGENTINA Reporting Year: 2009

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Site (Data) : CNE

Stock of waste as at December 2009

Country: ARGENTINA Reporting Year: 2009

Site Name: **CNE**

Full Name: CENTRAL NUCLEAR EMBALSE
EMBALSE NUCLEAR POWER PLANT

Inventory Reporting Date: December 2009 Waste Matrix Used: IAEA Def.

Comment **# 9931: Central Nuclear Embalse (CNE)**

La Central Nuclear Embalse (reactor tipo Candu) tiene una capacidad de producción de potencia instalada de 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

Waste Class: **LLW**

Waste Class Name	Location / Facility	Proc	Est.	Volume (m³)	RO %	FF/FE %	RP %	NA %	DF %	DC/RE %	ND %
LLW	Storage	N	N	334.145	100.00	0.00	0.00	0.00	0.00	0.00	0.00
LLW	Storage	Y	N	446.060	100.00	0.00	0.00	0.00	0.00	0.00	0.00

Processing - Treatment method(s)

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

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Regulators

Country: ARGENTINA Reporting Year: 2009

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

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Regulations / Laws

Country: ARGENTINA Reporting Year: 2009

Name:	**LNAN**	
Title or Name:	LEY NACIONAL DE ACTIVIDAD NUCLEAR (National Law of Nuclear Activiy)	
Reference Number:	24804	
Date Promulgated or Proclaimed:	1997-04-23	Law

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 RADIACTIVOS (Radioactive Waste Management Regimen).	
Reference Number:	25018	
Date Promulgated or Proclaimed:	1998-10-19	Law

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:	1999-12-01	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.

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Milestones

Country: ARGENTINA

Reporting Year: 2009

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Policies

Country: ARGENTINA Reporting Year: 2009

National Systems

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

Attachment **#831: Questionaire**

Estructura Orgánica del PROGRAMA NACIONAL DE GESTION DE.doc

LA ESTRUCTURA DEL PROGRAMA NACIONAL DE RESIDUOS RADIACTIVOS FUE ESTABLECIDA POR LA COMISION NACIONAL DE ENERGIA ATOMICA EL 2003-02-27, DE ACUERDO CON LA LEY NACIONAL DE RESIDUOS RACIACTIVOS.

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

	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

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Policies

Country: ARGENTINA Reporting Year: 2009

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

Comment **# 7270: RESPOSABILIDADES**

Las responsabilidades de los generadores de residuos y operadores de instalaciones de gestión de residuos radiactivos han sido establecidas por la Autoridad Regulatoria Nuclear en la norma AR.10.12.1.

	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

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Policies

Country: ARGENTINA Reporting Year: 2009

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

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Policies

Country: ARGENTINA Reporting Year: 2009

Disposal Facilities

	Licensing	(Yes - All;Yes - Some;No)
	If any of the following are part of your disposal policy, indicate Yes - All if they apply to all facilities, indicate Yes - Some if the apply to only some of the facilities or indicate No if they are not part of your policy at all.	
Q53	Environmental Assessment (EA)	Yes - 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
	If the use of active institutional controls is part of your Country's written policies, please indicate which of the following practices are either implemented or are being considered.	
Q65	access restrictions	Yes
Q66	drainage and/or leachate collection system(s)	No
Q67	leachate treatment systems	No
Q68	environmental monitoring	Yes
Q69	facility monitoring	Yes
Q70	surveillance	Yes
Q71	plans for intervention measures during active institutional control if there is an unplanned release of radioactive materials from the disposal facility	Yes

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Policies

Country: ARGENTINA Reporting Year: 2009

Processing/Storage

	Policies/Procedures	(Yes;No)
	Does your country have written policies or written procedures for the following:	
Q73	waste sorting/segregation	Yes
Q74	waste minimization	Yes
Q75	waste storage	Yes
Q76	processing and/or storing and/or disposing of nuclear fuel cycle waste separately from non-nuclear fuel cycle waste (also known as nuclear applications waste)	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

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Policies

Country: ARGENTINA Reporting Year: 2009

Spent/Disused SRS

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

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

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

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Policies

Country: ARGENTINA Reporting Year: 2009

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: IMPORTACIÓN DE RESIDUOS RADIACTIVOS**

LA CONSTITUCIÓN NACIONAL PROHIBE IMPORTAR RESIDUOS RADIACTIVOS. LA LEY DE RESIDUOS PELIGROSOS PROHIBE IMPORTAR RESIDUOS RADIACTIVOS Y REMITE A LA LEGISLACIÓN ESPECÍFICA.

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

Liquid HLW

Storage		(Yes;No)
Q106	Does your Country have high-level liquid wastes in storage?	No

UMMT

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

Decommissioning

Funding		(Yes - All;Yes - Some;No)
Q111	Does your Country require that funds should be set aside in support of future waste management activities, such as decommissioning activities?	Yes - 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

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

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National Inventory by Waste Class

Country: ARGENTINA Reporting Year: 2009

No data available.

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