

Site (Structure) : RWF Ekores

Country: BELARUS

Reporting Year: 2005

Full Name: Special enterprise for radioactive waste storage/disposal under auspice of Unitary enterprise for waste management "Ekores"

Location: About 10 km away from Minsk

Description:

Official Website:

License Holder(s): Unitary enterprise for waste management "Ekores"
35, Selitskogo str.
Minsk

Comment **# 147: What is "RWF Ekores" ?**

RWF Ekores (radioactive waste facility Ekores) is a special enterprise for management of radioactive waste. This is a typical RADON-type facility, constructed in accordance with the standard project TP-416-9-1 "Disposal radioactive waste enterprise" developed by Moscow Project Institute (GSPI) for Radon-type facilities of the former USSR in 1970. The site comprised laundry, garage for transport vehicles and 2 below surface, reinforced concrete vaults for solid radioactive waste, all of them being put in operation in 1977.

There are 2 concrete lined trenches containing so called "historic" radioactive waste in the territory of the site. They were filled with solid waste between 1964 and 1977.

The "Ekores" radioactive waste facility is situated about 10 km from the center of city of Minsk, a few hundred meters from the location of the former Nuclear Research Reactor and Scientific Center «Sosny». It is the only facility in the country that has been intended for storage/disposal of radioactive waste from small users.

Currently this site is under reconstruction. The reconstruction project is directed at improving physical protection and setting advanced technologies for new coming wastes and spent sources. It also makes provisions that the wastes currently disposed in the vaults and trenches should be retrieved, sorted and treated in the same way as new coming wastes.

Comment **# 150: Historic Ekores Disposal Facility**

The historic Ekores waste disposal facility was originally commissioned in 1964 and comprised 2 concrete lined trenches, up to 4 meters deep. A variety of solid radioactive waste (including sealed sources containing short-lived and long-lived radionuclides) was placed in these trenches. The solid waste was not segregated in the different waste types or conditioned. The trenches were filled with waste between 1964 and 1977. In 1977 the trenches were closed. Concrete slabs were placed on top of the trenches and these were covered by a layer of bitumen and by a mounded layer of soil. Today the mounds over the trenches can be seen with local vegetation growing on them. At the current rate the total activity of the waste disposed of in the trenches amounts to 17,6 TBq

Comment **# 151: Ekores storage and disposal facilities**

Second generation waste storage/disposal facilities (repositories) were put into operation in 1977. This comprised 2 below surface, reinforced concrete vaults. Each vault was covered by a lightly constructed building to provide environmental protection and acceptable working conditions to operate the facility throughout the year. Each vault has a storage capacity of 830 m³ and is divided into 8 cells. In addition, at one end of each vault there are a pair of so-called «wells» for spent sourcedisposal.

Each of the cells is covered by six concrete slabs. To load waste into a cell, one of the slabs is lifted by overhead crane, the waste is tipped into the cell and the concrete slab is replaced. According to the design the total activity of wastes to be disposed of in the vault is 7,4 TBq/a, with a specific activity of 3,7 MBq/kg.

The waste is collected from the waste producer by "Ekores" staff. It is not conditioned or volume reduced prior to emplacement in the repository. When a storage cell is considered to be full, free space at the top of the cell is filled with sand and a concrete grout.

One of the repositories (Repository # 1) is full to capacity. The total activity of disposed wastes is 252,8 TBq. The concrete slabs over the storage cells have been covered with a layer of asphalt, thus preventing further access to the cells.

It should be noted that in 1989, irradiated fuel from the nearby research reactor was placed in one of the cells in this repository. This comprises around 2kg of ²³⁵U in 10 purpose-built stainless steel containers.

Site (Structure) : RWF Ekores

Country: BELARUS

Reporting Year: 2005

Comment # 152: Ekores SRS Facilities

SRS Inventory

Storage and disposal of spent sealed radioactive sources at the Ekores Waste Disposal Facility

All spent SRS which had entered the facility until 1977 were buried in the concrete trenches (Kanyon 1, Kanyon 2). After 1977 there existed two options for spent SRS disposal. Those in protective containers with upper wall unloading were disposed of in the vaults for low and intermediate level waste (Rep 1 and Rep 2) together with their biological shielding. SRS from containers with bottom unloading were disposed of in the bore-hole repositories: Well 1, Well 2, Well 3, Well 4.

By the mid of 90s Kanyon 1, Kanyon 2, and Rep 1 had been closed. Spent SRS disposed of in these repositories are declared today as disposed (not retrievable) radioactive waste. Within Waste data Component of the NEWMDB, the inventory of these SRSs is included into the inventory of LILW in disposal facilities at the Ekores site.

SRS in Rep 2 should be regarded as spent SRS (waste) being in storage in the facilities intended for storage of both SRS and LILW. The structure of the Framework Section of the NEWMDB does not permit to report such kind "mixed" storage. So to settle the issue we need to define an additional dedicated SRS facility "Rep 2SS" at the Ekores site, which is in reality the same facility Rep 2, used for storage of all kinds of wastes.

It should be emphasised that SRS inventory reported to the Waste Data Component of the NEWMDB shows not all but only the most important SRS being under storage and disposal at the Ekores site.

Comment # 283: Waste inventory at the RWF "Ekores"

Due to the fact that at the Ekores site waste inventory information is available only in "kg", not in m3, the input screens for inventories of the waste in the Ekores facilities show weight, not volumes (1 m3 = 1 tonne)

Waste management facilities that are located at this site:

Facility:	Kanion 1
Description:	Kanion 1 is the name of closed "historical" repository #1 which contains variety of unconditioned waste generated by small users.

Site (Structure) : RWF Ekores

Country: BELARUS

Reporting Year: 2005

Disposal part of facility **Kanion 1**

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:	engineered near surface		
Facility is modular?	No		
Capacity existing (m3):	200	Capacity planned (m3):	200

Depth (m):	3	Host medium:	sedimentary (sand)
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Phase Name	Start Year	End Year	Estimate
planning and/or concept assessment	1958	1960	False
site selection	1960	1961	False
design	1961	1962	False
construction	1961	1963	False
commissioning	1963	1963	False
operation	1963	1977	False
closure	1977	1977	False
institutional control	1977		False

Site (Structure) : RWF Ekores

Country: BELARUS

Reporting Year: 2005

Facility:	Kanion 2		
Description:	Kanion 2 is the name of closed "historical" repository # 2 which contains variety of unconditioned waste generated by small users.		
Disposal part of facility Kanion 2			
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:	engineered near surface		
Facility is modular?	No		
Capacity existing (m3):	225	Capacity planned (m3):	225
Depth (m):	3	Host medium:	sedimentary (sand)
Phase Name	Start Year	End Year	Estimate
planning and/or concept assessment	1958	1960	False
site selection	1960	1961	False
design	1961	1962	False
construction	1961	1963	False
commissioning	1963	1963	False
operation	1963	1977	False
closure	1977	1977	False
institutional control	1977		False

Site (Structure) : RWF Ekores

Country: BELARUS

Reporting Year: 2005

Facility:	Rep 1
Description:	Repository 1 is the name of closed repository # 1, which contains variety of conditioned and unconditioned waste generated by small users. It contains also ten containers with irradiated nuclear material.

Storage part of facility Rep 1

The following shows storage 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

Capacity:	
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Types of Storage Units

Storage Unit Name	Type Name	Year Opened	Closed?	Full?	Modular?	Contains SRS?
Rep 1	trench (lined)	0	Yes	No	No	No

Site (Structure) : RWF Ekores

Country: BELARUS

Reporting Year: 2005

Disposal part of facility Rep 1

The following shows disposal status for waste classes and SRS.

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

List SRS?	No
List UMMT?	No

Type:	engineered near surface		
Facility is modular?	No		
Capacity existing (m3):	820	Capacity planned (m3):	820

Depth (m):	3	Host medium:	sedimentary (sand)
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Phase Name	Start Year	End Year	Estimate
planning and/or concept assessment	1970	1972	False
construction	1975	1976	False
commissioning	1977	1977	False
operation	1977	1992	False
closure	1992	1993	False
institutional control	1993		False

Site (Structure) : RWF Ekores

Country: BELARUS

Reporting Year: 2005

Facility:	Rep 2
Description:	Repository 2 for storage and disposal of solid low- and intermediate level waste.

Storage part of facility Rep 2

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?	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?
Rep 2	trench (lined)	1979	No	No	No	No

Site (Structure) : RWF Ekores

Country: BELARUS

Reporting Year: 2005

Disposal part of facility **Rep 2**

The following shows disposal status for waste classes and SRS.

Waste Class	Actual	Planned
LILW-SL	Yes	Yes
LILW-LL	Yes	Yes
HLW	Yes	Yes

List SRS?	Yes
List UMMT?	No

Type:	engineered near surface		
Facility is modular?	No		
Capacity existing (m3):	705	Capacity planned (m3):	820

Depth (m):		Host medium:	sedimentary (sand)
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Phase Name	Start Year	End Year	Estimate
operation	1979		True

Site (Structure) : RWF Ekores

Country: BELARUS

Reporting Year: 2005

Facility:	Rep 3					
Description:	Rep 3 is the storage facility for spent sealed sources.					
Storage part of facility Rep 3						
The following shows storage status for waste classes and SRS.						
Waste Class	Actual	Planned				
LILW-SL	No	No				
LILW-LL	No	No				
HLW	No	No				
List SRS?	No					
List UMMT?	No					
Capacity:	There are 7 wells for spent gamma sources and 4 wells for alpha and beta sources.					
Types of Storage Units						
Storage Unit Name	Type Name	Year Opened	Closed?	Full?	Modular?	Contains SRS?
Rep 3	well	2003	No	No	No	Yes

Site (Structure) : RWF Ekores

Country: BELARUS

Reporting Year: 2005

Facility:	Well 1		
Description:	Bore-hole repository for disposal of SRS		
Disposal part of facility			
Well 1			
The following shows disposal status for waste classes and SRS.			
Waste Class	Actual	Planned	
LILW-SL	No	No	
LILW-LL	No	No	
HLW	No	No	
List SRS?	Yes		
List UMMT?	No		
Type:	engineered surface		
Facility is modular?	No		
Capacity existing (m3):	1	Capacity planned (m3):	1
Depth (m):	4	Host medium:	crystalline rock (basalt)
Phase Name	Start Year	End Year	Estimate
operation	1977	2000	False

Site (Structure) : RWF Ekores

Country: BELARUS

Reporting Year: 2005

Facility:	Well 2		
Description:	Bore-hole repository for disposal of SRS		
Disposal part of facility			
Well 2			
The following shows disposal status for waste classes and SRS.			
Waste Class	Actual	Planned	
LILW-SL	No	No	
LILW-LL	No	No	
HLW	No	No	
List SRS?	Yes		
List UMMT?	No		
Type:	engineered surface		
Facility is modular?	No		
Capacity existing (m3):	1	Capacity planned (m3):	1
Depth (m):	4	Host medium:	crystalline rock (basalt)
Phase Name	Start Year	End Year	Estimate
operation	1977	2000	False

Site (Structure) : RWF Ekores

Country: BELARUS

Reporting Year: 2005

Facility:	Well 3		
Description:	Bore-hole repository for disposal of SRS		
Disposal part of facility			
Well 3			
The following shows disposal status for waste classes and SRS.			
Waste Class	Actual	Planned	
LILW-SL	No	No	
LILW-LL	No	No	
HLW	No	No	
List SRS?	Yes		
List UMMT?	No		
Type:	engineered surface		
Facility is modular?	No		
Capacity existing (m3):	1	Capacity planned (m3):	1
Depth (m):	4	Host medium:	crystalline rock (basalt)
Phase Name	Start Year	End Year	Estimate
operation	1977		False

Site (Structure) : RWF Ekores

Country: BELARUS

Reporting Year: 2005

Facility:	Well 4		
Description:	Bore-hole repository for disposal of SRS		
Disposal part of facility			
Well 4			
The following shows disposal status for waste classes and SRS.			
Waste Class	Actual	Planned	
LILW-SL	No	No	
LILW-LL	No	No	
HLW	No	No	
List SRS?	Yes		
List UMMT?	No		
Type:	engineered surface		
Facility is modular?	No		
Capacity existing (m3):	1	Capacity planned (m3):	1
Depth (m):	4	Host medium:	crystalline rock (basalt)
Phase Name	Start Year	End Year	Estimate
operation	1977		False