

Site (Structure) : Dukovany

Country: CZECH REPUBLIC

Reporting Year: 2013

Full Name: URAO Dukovany

Description:

Official Website:

License Holder(s): Previously owned and operated by the power generation company CEZ,plc., on Jan 1st 2000 transferred under the management of the state organization - the Radioactive Waste Repository Authority (RAWRA | SURAO).

Comment # 381: Information

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

Comment # 14554: Site Dukovany

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

Comment # 26992: Radionuclide Inventory

The main radionuclides in the waste are Co-60, Cs-134 and Cs-137. Transuranic radionuclides, such as Pu-238/239 and Am-241, are below 1 Bq/l. The other long lived radionuclides, such as C-14, Sr-90 and Tc-99, are in the range of 0.1 – 8 kBq/l

Comment # 26993: Institutional Framework

The Radioactive Waste Repository Authority's mission is to ensure safe disposal of existing and future radioactive waste (RAW) in the Czech Republic and to safeguard the requirements for the protection of human health and the environment from the adverse impacts of such waste. RAWRA works in active and open co-operation with the local communities and municipalities in the vicinity of which repositories are located, as well as with the general public represented by non-governmental environmental organizations, civic associations, etc. RAWRA provides the general public with objective and complete information concerning its activities and intentions.

Waste management facilities that are located at this site:

Facility:	URAO D
Description:	Near-surface radioactive waste repository for disposal of operational LILW from both NPPs and waste from their decommissioning. Since 2006 also unprocessed RAW of institutional origin can be disposed in the repository.
Detailed Facility Description:	<p>The facility consists of 112 above-ground concrete vaults arranged in two double rows. The single vaults are 17.3 m x 5.3 m x 5.4 m,</p> <p>The geometric volume of the total repository is 55,450 m³ and its barriers are comprised of concrete walls, asphaltpropyleneconcrete (APC) and a clay fill. The bottom are concrete, APC, binder, APC, concrete (Base joint), earth (Macadam) and gravel. The caps are made from prefabricated reinforced concrete slabs, APC, impermeable soil and overburden graded to facilitate drainage.</p> <p>The facility is designed for the disposal of low and intermediate level waste from the Dukovany NPP. The waste is placed in 200 liter drums which are stacked in 4 to 7 layers. Free space between the waste drums is filled with concrete.</p>
Waste Packages:	

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	<p>Most of the liquid and solid waste at Dukovany is immobilized in a bitumen matrix and packaged in 200 l, galvanized steel drums. Some waste is compacted and packaged in steel drums for disposal. Also high-integrity container (HIC) type packages is foreseen.</p> <p>The repository is designed to receive primarily short lived low and intermediate level waste from the Dukovany NPP. The types of waste disposed of at the facility include evaporator concentrates, miscellaneous trash, contaminated solid waste, large-size items from the primary circuit, and spent ion exchange resins.</p> <p>The facility has a capacity of 55,450 m³, corresponding to 180,000 x 200 liter drums. By the end of 2004, the total amount of disposed wastes was 2,830 m³.</p> <p>The waste acceptance criteria for the Dukovany facility are expressed in terms of radionuclide activity limits set on a waste drum, vault and the repository. Mobile activity includes surface contamination of a waste package, leachable activity and non-standa</p>
Facility Operation:	By the end of 2005, 5 vaults of 36 have been filled. Closure plan for the repository is at a conceptual stage. The closure date is around 2100, followed by an institutional control period of ~300 years.
Financing:	Activities are financed from the nuclear account, which collects payments by the radioactive waste producers; the nuclear account is administered by the Ministry of Finance.

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Disposal part of facility URAO D

The following shows disposal status for waste classes and SRS.

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

List SRS?	No
List UMMT?	No

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

Depth (m):	5.3	Host medium:	sedimentary (other)
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Phase Name	Start Year	End Year	Estimate
planning and/or concept assessment	1976	0	False
site selection		1982	False
design		1986	False
construction	1987	0	False
commissioning		1994	False
operation	1995	0	False
closure	2100	0	True
institutional control	2100	2400	True

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

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

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

At the end of 2006 5579 m³ of waste (11,5 vaults; about 10 % of the volume of the whole repository) was disposed in the repository.