JAVYS Operation Environmental Impacts Report 2010

Content

Environmental Policy

Jadrová a vyraďovacia spoločnosť, a.s. is a company dealing with operation of nuclear facilities, decommissioning of nuclear facilities, treatment of radioactive waste and used nuclear fuel guaranteeing the best reliability and maximum safety, with ongoing improvement of environmental behaviour.

To fulfil this task, in its environmental policy the management of the joint stock company Jadrová a vyraďovacia spoločnosť, a.s., is committed to adhere to the below principles:

To establish, implement, maintain and improve the environmental management system according to the STN EN ISO 14001:2005 standard

To ensure for ongoing minimisation of environmental impacts of nuclear facilities

To protect the environment by applying the best management practices in waste generation, air emissions, water discharges and other pollution generated during the process of operation and decommissioning of nuclear facilities, treatment of radioactive waste and used nuclear fuel

To use the state-of-the-art technologies and equipment with minimum environmental impacts

To meet the valid environmental regulations and other commitments in the area of environmental protection

To examine and verify regularly the emergency plans and procedures

To monitor and evaluate indicators showing the impacts to all parts of the environment and to publish regularly the Environmental Protection Reports

To support open dialogue with the public, relevant state and municipal environmental authorities

To enhance continuously environmental awareness of staff, and together with suppliers and contracted partners to participate in systematic management of environmental protection

Employees need to be informed of this Environmental Policy, which is binding for them.

INTRODUCTION

2010 Environmental impacts report (EIA) provides comprehensive information about waste and water management, air pollution protection, prevention of major industrial accidents and environmental protection related activities undertaken by JAVYS in 2001.

The goal and mission of JAVYS - to apply environmental friendly approach and environmental protection, is taken into account in its all activities; the company applies the certified environmental management system in accordance with the „Environmental Management Systems“ ISO 14001:2004 standard.

Environmental protection requirements defined both in Slovak and EU legislation, as well as the obligation to observe the limits and terms stipulated in decisions governing environmental protection issued by the state and supervisory authorities are translated to all JAVYS activities.

Therefore, within this process approach, environmental protection is crucial for integrated management system processes.

AIR PROTECTION

In regards to air protection, JAVYS observes the key legislation – the Air Act N°137/2010 Coll[1]. as amended, as well as all directly and indirectly related laws and regulation.

The decisions issued by the relevant state and supervisory air protection authorities - District Environmental Office in Trnava and Slovak Environmental Inspection in Bratislava, define the air pollution sources operation method, issue the permit for source operation, and define the emission monitoring system and the discharged pollutants limits.

AIR POLLUTION SOURCES

JAVYS operates major, medium as well as small air pollution sources.

Auxiliary boiler plant (NaRK)	major source
LOOS boiler located in NaRK building	medium source
Gas boiler room	medium source, owned by JESS, a.s.
BR WTC Incineration facility	medium source
Infrared emitter in FCC production unit in Trnava	medium source
Diesel generators V1	medium source
Diesel generator in FCC production unit in Trnava	small source
Diesel generator ISFS	small source
Fibre concrete mixture production in FCC production unit in Trnava	small source

[1] *Transl. note: Collection of Laws in Slovak*

EMISSIONS FROM INDIVIDUAL SOURCES

SOURCE	Fuel	Pollutant (kg)				
	Natural gas (m^3)	TZL	SO_2	NO_x	CO	C_{org}
Auxiliary boiler plant (NaRK)	156 736	11,911	1,429	262,061	87,85	11,16
Boiler LOOS	24 993	1,899	0,228	37,039	14,958	2,493
Gas infrared emitters	91 680	6,967	0,836	135,869	54,87	9,145
Gas boiler room	100 817	7,662	0,919	149,41	60,338	10,056
	Diesel (t)					
Diesel generators V1 with 1,680MW input	9,686	13,75	0,193	48,43	7,75	1,104
Diesel generator V1 with 3,37 MW input	7,597	10,78	0,15	37,98	6,07	0,54
Diesel generator ISFS	1,344	1,90	0,02	6,72	1,07	0,15

Note: TZL stands for solid pollutants

Diesel generator in FCC production unit doesn´t work non-stop.. In 2010, 10 l of diesel oil was used to check the operation capability during hour testing period.

Operating permit for fibre-concrete mixture production was issued by the Municipal Authority in Trnava on March 10th 2010. In 2010, 350 FCC containers were produced, i.e. 1 484 tons of fibre-concrete mixture (0,02968 tons of TZL).

AIR POLLUTANTS RELEASED FROM JAVYS, A.S.

BR WTC INCINERATION PLANT – VOLUMES OF AIR POLLUTANTS RELEASED DURING THE PERIOD OF YEARS 2007 - 2010

Air pollutant	Year 2007 (t)	Year 2008 (t)	Year 2009 (t)	Year 2010 (t)
HCl	0,00160	0,00139	0,00220	0,00105
HF	0,00238	0,00578	0,01080	0,00896
Hg+Tl+Cd	0,00267	0,00097	0,00002	0,000035
As+Ni+Cr+Co	0,01205	0,00440	0,00030	0,00043
Pb+Cu+Mn	0,00163	0,00060	0,00008	0,000157
SO_2	0,34783	0,01065	0,00549	0,00611
NO_X	3,59323	0,98903	1,17000	0,85275
CO	0,72673	0,16806	0,09366	0,07838
TZL	0,03596	0,02016	0,00381	0,00523
Corg	0,04495	0,02967	0,01835	0,01446
Number of operation hours	6 037	7 574	6 143	5 342

Note: TZL stands for solid pollutants

EQUIPMENT CONTAINING FLUORINATED GREENHOUSE GASES

JAVYS operates certain facilities that require notification to the District Environmental Authority in Trnava; their operating conditions are governed by the Act N°286/2009 Coll. concerning fluorinated greenhouses gases and the Regulation (EC) of the European Parliament and of the Council N°842/2006 on certain fluorinated greenhouse gases.

FACILITIES CONTAINING MORE THAN 3 KG OF FLUORINATED GREENHOUSE GASES

Building N°	Unit	Substance	Total volume (kg)	Number (pcs)	Owner
35	Compact switch room (N°) 110 kV	SF_6	186	2	JAVYS
35	Measuring current transformer	SF_6	24	6	JAVYS
35	Measuring voltage transformer	SF_6	26,4	6	JAVYS
62	Air condition unit	CH_2F_2	8	1	JAVYS
62	Air condition unit	CH_2F_2	11	1	JAVYS
62	Air condition unit	CH_2F_2	20	2	JAVYS
61	Air condition unit	CH_2F_2	5	1	JESS
632A	Cooling unit	CH_2F_2	92	2	JESS
632A	Cooling unit	CH_2F_2 + C_2HF_5 + CH_2FCF_3	15	1	JESS

RADIOACTIVE RELEASES TO ATMOSPHERE

JAVYS nuclear facilities only release small portions of the limits approved for gaseous and liquid releases to the environment, and these are subject to multiple control measurements.

The approved limits for releases guarantee that under standard or specific operating conditions the annual radiation limit for a person - 0,25 mSv/year, is not exceeded as a consequence of overall releases of radioactive substances to atmosphere and hydrosphere from nuclear power plant operation and from its all sources.

Limit values for radioactive releases are defined in individual decisions issued by the Slovak Public Health Authority.

GASEOUS RELEASES TO ATMOSPHERE IN THE YEAR 2010

	Activity of gaseous effluents	Annual limit	Per cent of annual limit
aerosols A1	$3{,}39.10^{3}$ kBq	$9{,}4.10^{5}$ kBq	0,358
aerosols ISFS	$0{,}8.10^{3}$ kBq	$3{,}0.10^{5}$ kBq	0,271
inert gases – V1	5,577 TBq	2000 TBq	0,179
aerosols - V1	6,264 MBq	80000 MBq	0,008
iodine – V1	0,765 MBq	65000 MBq	0,001

No radioactive substances were released from NRWR taking into account its characteristics.

486 918 000 m^3 of air was released from FP LRW to SE-EMO smokestack, with the overall activity of 12 276 Bq.

Releases to atmosphere from JAVYS facilities were deeply below the limits approved by the Slovak Public Health Authority in the year 2010.

WATER MANAGEMENT

JAVYS observes the key water protection legislation – the Water Act N° 364/2004 Coll. as amended, as well as all directly and indirectly related laws and regulations.

Limits for volumes of discharged wastewaters, concentration and balance limits of pollutants in wastewater, the place and method of discharge, volume of surface water, etc., are defined in decisions issued for JAVYS by the state and supervisory water management authorities.

DRINKING WATER

In Jaslovské Bohunice site, JAVYS is connected to drinking water pipeline of Trnava Water Utility.

NRWR and FP LRW in Mochovce use SE, a.s.- EMO plant facilities for drinking water supply.

FCC production premises in Trnava are connected to drinking water pipeline of Trnava Water Utilities, drinking water for building in Bratislava is supplied from Bratislava Water Utilities drinking water pipeline.

DRINKING WATER CONSUMPTION IN 2010

SITE	Volume (m^3) of drinking water		
	2008	2009	2010
J. Bohunice Site	192 243	164 413	165 673
National RAW Repository (NRWR)	161	208	243
FP LRW	228	275	288
FCC production unit	964	1134	1 467
Administrative centre Bratislava	949	2 218	1 823
TOTAL	194 545	168 248	169 494

The overall drinking water consumption increased by 1 246 m^3 compared to the year 2009.

COOLING WATER

JASLOVSKÉ BOHUNICE

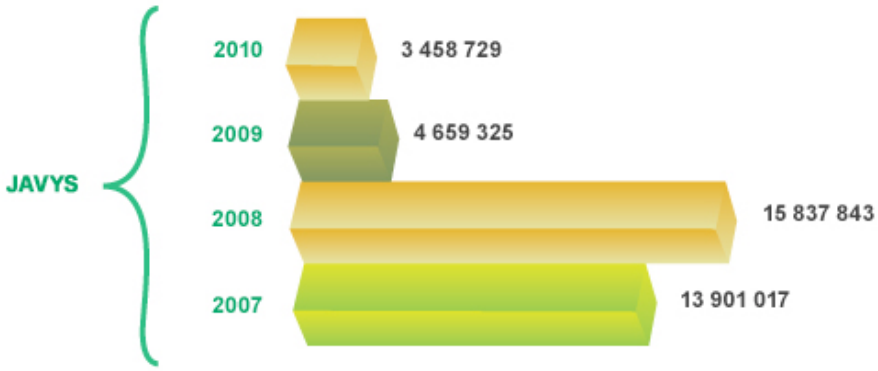
Surface water from SÍňava water reservoir is used for cooling. Cooling water for JAVYS is supplied by SE, a.s., EBO V2 plant.

Surface (raw) water from the Váh River is used for cooling NPP V1 safety and emergency systems, and for cooling radioactive waste processing and repository operations. Until the end 2009, SE, a.s., EBO V2 plant supplied water filtered through sand filters in Pumping and filtration station Pečeňady. Since January 1st 2010, surface water from the Váh River is supplied that is not treated in sand filters. Cooling water consumption is decreasing since 2009.

COOLING WATER CONSUMPTION DURING THE PERIOD OF YEARS 2007 - 2010

Volume (m^3)	Cooling water consumption – water from the Váh River (m^3)		
	V1	A1	JAVYS
2007	13 764 558	136 459	13 901 017
2008	15 755 053	82 790	15 837 843
2009	4 612 000	47 325	4 659 325
2010	3 436 698	22 031	3 458 729

COOLING WATER CONSUMPTION – WATER FROM THE VÁH RIVER



MOCHOVCE FP LRW

FP LRW technology lines (bitumenisation plant and thickening evaporator) are linked to pipeline supplying unimportant technical water from SE-EMO distribution pipelines, i.e. to circulating cooling water. Cooling water consumption recorded and measured for invoicing purposes was 9 461 m^3 during the reporting period from January until December 2010. Volume activity is measured non-stop in FP LRW cooling water, and if the defined activity limits are exceeded, the operation is stopped until the source of activity is identified. Active cooling water is then pumped to active wastewater. No increased activity of cooling water was recorded during the reporting period.

WASTEWATER

JAVYS, A.S. JASLOVSKÉ BOHUNICE

In JAVYS, a.s. site, the below specified pipelines are operated:

- Rain water pipeline runs into the Dudváh River through open Manivier Kanal
- Sewage flows into wastewater treatment plant – BIOCLAR, and then to the Váh River through SOCOMAN pipelines collector
- Industrial wastewater – water polluted with crude oil flows into central gravitational oil separator; cleaned water then runs to coagulation unit for supplementary cooling water treatment in SE, a.s.- EBO V2
- Special sewer runs to special tanks collecting active wastewater from individual sites for further processing, which is treated, checked and then discharged (in an organized way)
- The trunk sewage collector SOCOMAN drains other wastewater, including low-radiation wastewater from RAW processing and treatment technology units, to the Váh River

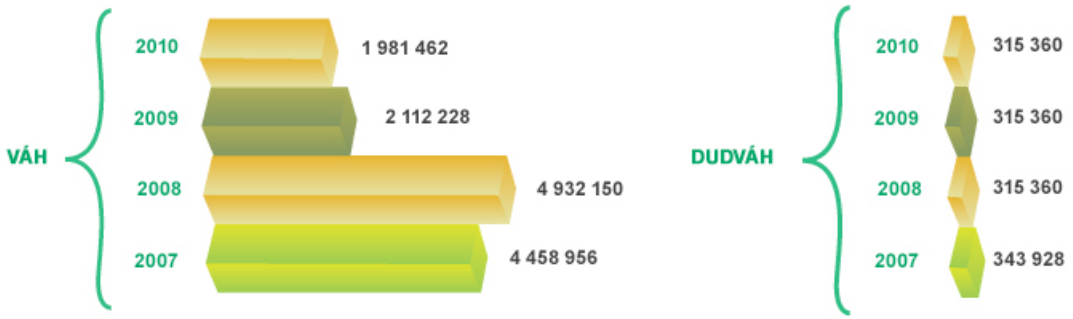
DISCHARGED WASTEWATER BALANCE

Wastewater discharge permit N° KÚŽP-1/2006/00273/Fr (č. KÚŽP-1/2008/00582/Gl) from JAVYS, a.s. Jaslovské Bohunice site issued by the Regional Environmental Authority in Trnava was valid until December 31st 2010; its validity was prolonged until December 31st 2014 by the decision of the Regional Environmental Authority in Trnava N°KÚŽP-1/2010/00465/Mj. KŠP and ^{3}H volume activity is monitored in wastewater released from JAVYS, a.s. site, as well as chemical pollution indicators defined in the respective decisions issued for the company.

No approved pollutant limits were exceeded during the reporting period in wastewaters.

VOLUME OF WASTEWATER DISCHARGED TO RECIPIENTS VÁH AND DUDVÁH RIVER DURING THE PERIOD OF YEARS 2007 - 2010

VOLUME OF WASTEWATER DISCHARGED FROM JAVYS



AVERAGE CONCENTRATION OF CHEMICAL POLLUTANTS DISCHARGED TO THE RECIPIENT – VÁH RIVER

Chemical indicators	Average concentration of the discharged pollution (year 2010)	Maximum concentration limit (Decision N° 1/2006/00273/Fr issued by the Regional Environmental Authority (KÚŽP)
mg/l	mg/l	mg/l
Acidity, alkalinity - pH	8,172	9,00
Biological oxygen consumption -BOD_5	2,961	8,00
Chemical oxygen consumption – COD_{Cr}	10,639	30,00
Insoluble solids - IS	15,000	20,00
Soluble solids - SS	315,333	1 000,00
Ammonia - N-NH_4^+	0,431	4,00
Nitrates - NO_3^-	10,124	50,00
Sulphates - SO_4^{2-}	29,943	350,00
Chlorides - Cl^-	11,782	100,00
Non-polar extract. solids - NEL	0,027	0,35
Total phosphate – $P_{tot.}$	0,271	2,00
Iron - Fe	0,374	2,00
Hydrazine hydrate - N_2H_4	0,020	2,00
Detergents - PAL	0,057	0,50

AVERAGE CONCENTRATION OF CHEMICAL POLLUTANTS DISCHARGED TO THE RECIPIENT - DUDVÁH RIVER

Chemical indicators	Average concentration of the discharged pollution (year 2010)	Maximum concentration limit (Decision N° 1/2006/00273/Fr issued by the Regional Environmental Authority (KÚŽP))
(mg/l)	mg/l	mg/l
Acidity, alkalinity - pH	8,319	9,00
Chemical oxygen consumption – COD_{Cr}	11,583	30,00
Insoluble solids - IS	15,083	40,00
Soluble solids - SS	318,000	1 000,00
Sulphates - SO_4^{2-}	55,992	350,00
Chlorides - Cl^-	14,867	100,00
Non-polar extract. solids – NEL	0,038	0,35
Total phosphate – $P_{tot.}$	0,218	2,00
Iron - Fe	0,375	2,00
Hydrazine hydrate - N_2H_4	0,020	2,00

NRWR MOCHOVCE

NRWR Mochovce rain water pipeline runs through rain water collection tanks to the Telinský creek.

Slovak Public Health Officer issued a decision N° OOZPŽ/6283-1/2006 for JAVYS, a.s. approving activities leading to radiation, which also includes "activity limits for radionuclides released to water from surface water running from NRWR Mochovce". The decision concerning discharge of surface water was issued by the Environmental Department of Regional Authority in Nitra. In 2010, 11 126 m^3 of surface water was discharged to the Telinský creek from NRWR.

Volume activity limits of radionuclides in discharged water defined in the Slovak Public Health Officer Decision were not exceeded during the reporting period.

QUALITY OF DRAIN WATER DISCHARGED FROM NRWR

PARAMETER RADIONUCLIDE	LIMIT (Bq)	RELEASED ACTIVITY (Bq)	PORTION OF LIMITS AND TERMS (LaP) (%)
tritium	$1,88 . 10^{10}$	$7.06.10^{6}$	0.038
Cs-137	$2,28 . 10^{7}$	$1.85.10^{5}$	0.811
Co-60	$2,24 . 10^{7}$	$1.51.10^{5}$	0.674
Sr-90	$2,44 . 10^{8}$	$8.03.10^{5}$	0.329
Pu-239	$5,56 . 10^{5}$	$7.98.10^{4}$	14.352

FP LRW MOCHOVCE

Sewage from FP LRW runs to the SE-EMO sewer that leads to wastewater treatment plant, and after treatment it is discharged to environment together with other SE-EMO water.

The volume of rain water is calculated from the overall FP LRW building roofs surface and annual rainfall (1,7 mm/day). Rainwater runs to SE-EMO rain water pipeline together with other rain water caught in other SE-EMO buildings. Rain water is collected in retention basins, measured, and then discharged. Rain water and sewage services are managed by SE, a.s..

RADIOACTIVE RELEASES TO HYDROSPHERE

In 2010, radioactive wastewater runs through the pipeline collector SOCOMAN to the Váh River through Drahovský Kanal; except for the heating steam condensate from auxiliary boiler room which flows through the Manivier Kanal to the Dudváh River. Volume activity of tritium and corrosive and fission products is measured to check the activity of released wastewater, as well as the volume of water in collection tanks for NPP A1 and V1; water in the measured buildings is also monitored to supplement the monitoring of discharged water. Low-radiation water is discharged together with water pumped out during the standard operation of remediation pumping of underground water from the drill N° N-3 (SO 106) that is governed by the permit issued by the Regional Authority in Trnava under the Water Act N° 364/2004 Coll.

LIQUID RELEASES FROM A1 NPP TO THE VÁH RIVER (RECIPIENT) IN 2010

	Release activity		Annual limit	% of the annual limit
Corrosive and fission products	116,809	MBq	12.10^{3} MBq	0,97 %
tritium	225,719	GBq	10.10^{3} GBq	2,26 %
Volume of discharged water	195 635	m^3		

No water was discharged to the Dudváh River in 2010 from A1 site; condensation water from auxiliary boiler plant (NaRK) were released to rain water pipeline (volume - 160 m^3, with summary tritium activity of 0,024 GBq, i.e. 0,012 % of the approved limit)

LIQUID RELEASES FROM V1 NPP TO VÁH AND DUDVÁH RIVER IN 2010

	Release activity	**Annual limit**	**% of the annual limit**
Releases to hydrosphere (Váh River)			
Volume of discharged water 6213 m^3			
Corrosive and fission products	22,24 MBq	13000 MBq	0,17 %
tritium	298,04 GBq	20000 GBq	1,490
Releases to hydrosphere (Dudváh River)			
Volume of discharged water 160 m^3			
tritium	0,024 GBq	200 GBq	0,012

Only surface water (11 126 m^3) was discharged from NRWR, and no limit indicators were exceeded during the reporting period; the measured values were ranging around detection limits.

Two types of secondary radioactive liquid waste is generated in FP LRW. These active media (wastewater, vapour condensate) are not released to the environment (active releases) and are pumped to SE, a. s. – plant EMO for further treatment and processing.

Measured data show that no tritium activity limit was exceeded in the released water, and parameters of other corrosive and fission products in wastewater were far lower than the approved limits.

Moreover, measurement results from direct releases to environment and values measured in JAVYS surroundings in regard to radiation protection prove that JAVYS operation remained stable and reliable in 2010 with negligible radiological impact on the environment.

MONITORING AND PROTECTION OF UNDERGROUND WATER

A1

Monitoring and protection of underground and soil water in Jaslovské Bohunice and its surroundings is supplied as outsourced service in accordance with the Monitoring Programme and 8-PLN-010 Emergency Measures Plan to prevent pollution of surface and underground water in JAVYS, a. s., in its part underground water since 1997 in cooperation with EKOSUR (*company*).

Radiation in underground waters within A1 site is stabilised at the moment; long time and regular monitoring is in place. Since 2000, there is ongoing remediation pumping system operating that removes contaminated underground water from geological surrounding, and the movement of residual contamination outside of the area is thus mitigated.

Activities to gradually remove soil and subsequently underground water contamination sources are performed within the NPP A1 decommissioning project.

Independent study was prepared entitled "The need of remediation pumping in NPP A1 site" in order to assess the efficiency and suitability of underground water remediation pumping from building N° 106 (drill N-3), which recommended to continue with the non-stop remediation pumping of underground water without any further adjustments in the approach already applied.

ASSESSMENT OF STANDARD OPERATION OF UNDERGROUND WATER REMEDIATION PUMPING FROM THE DRILL N° 3 IN 2010

Remediation year 2010	Spent KŠP activity	KŠP limit utilisation	Spent tritium activity	^{3}H limit utilisation	Volume of pumped water [m^3]
	[MBq]	[%]	[GBq]	[%]	
Total	**6,66**	**0,055**	**135,57**	**1,356**	**189 956,88**

The values in column „limit utilisation" are those defined in the respective Decision; KŠP limit = 1,2.10^4 MBq, ^{3}H limit = 1,0.10^4 GBq)

Besides monitoring inside the company premises, also the surrounding environment is monitored. Based on underground water monitoring results around Bohunice site, significant improvement of radiation situation may be noted near the villages of Malženice and Žlkovce (tritium volume activity lowered to insignificant level reaching the background values).

NRWR MOCHOVCE

There are 52 monitoring drills (underground water) within and around NRWR from which samples were taken in accordance with the approved time schedule in 2010, and then chemical and radiochemical analysis were made.

Besides underground water, also drainage water is monitored in NRWR, where volume activity of radionuclides was below the limits approved by the Public Health Offices for the year 2010 in the Decision N° OOZPŽ/6283-1/2006.

Rain water collection tanks are used to discharge drainage waters that is analysed together with the discharged water.

RESULTS OF CHEMICAL AND RADIO-CHEMICAL ANALYSIS OF WATER

Measured parameter	Activity (Bq/l)
^{3}H	< 2.2
total beta activity	< 1
^{137}Cs	< 0,022
^{60}Co	< 0,025
^{90}Sr	< 1
^{239}Pu	< 0,06

The results of radiochemical measurements show only background values, and no adverse environmental impacts were recorded during the operation in NRWR or its surroundings.

WASTEWATER MANAGEMENT (NON-ACTIVE WASTE)

JAVYS observes the key law governing the waste management (non-active waste) - the Waste Act N°223/2001 Coll. as amended, and all directly or indirectly linked legislation.

Waste management in JAVYS means to collect, sort and store waste in premises assigned for those purposes – the waste collection centre. Wastes belonging to the “hazardous” waste category are temporarily stored in adequate and appropriately secured premises in order to avoid any adverse impacts or danger in life and assets of people and the environment.

The wastes generated in JAVYS result directly and also indirectly from its activities.

WASTE BALANCE

In 2010, JAVYS, a.s. generated wastes categorised as “other” (O) and “hazardous” (H) according to the Waste Catalogue – the Decree of the Slovak Ministry of Environment N°284/2001 Coll.; municipal and biodegradable waste.

VOLUME AND TYPE OF OTHER WASTE GENERATED BY JAVYS

Catalogue N°	Type of waste	Waste characteristics	Volume (kg)	Reused (kg)	Disposed (kg)
17 09 04	O	Mixed construction and demolitions waste	99 330		✓
17 06 04	O	Insulation materials other than those mentioned in 17 06 01and 3	151 040		✓
17 05 06	O	Excavated soil	151 570		✓
17 04 11	O	Cables-aluminium made	4 710	✓	
17 04 07	O	Iron scrap	281 310	✓	
17 04 05	O	Iron and steel-stainless	4 340	✓	
17 04 03	O	Lead	750	✓	
17 04 02	O	Aluminium	4 313,2	✓	
17 04 01	O	Copper	2 418,6	✓	
17 03 02	O	Bitumen mixtures other than those mentioned in 17 03 01	4 460	✓	✓
17 02 02	O	Glass	12 700	✓	
17 02 01	O	Wood	1 070		✓
17 01 01	O	Concrete	212 114		✓
16 02 14		Discarded other than those mentioned in 16 02 09 - 13	17 720	✓	
15 01 06	O	Mixed packaging	9 860		✓
15 01 02	O	Plastic packaging	480	✓	
15 01 01	O	Paper and cardboard packaging	6 060	✓	
		Total volume	**964 245,8**	**334 801,8**	**629 444**

The overall volume of generated other waste is lower by 1555,75 tons compared to the year 2009; and lower by 180,9 tons in case of hazardous waste.

VOLUMES AND TYPES OF HAZARDOUS WASTE GENERATED BY JAVYS

Catalogue N°	Type of waste	Waste characteristics	Volume (kg)	Reused (kg)	Disposed (kg)
17 04 09	H	Metal waste contaminated with dangerous substances	410		✓
16 06 01	H	Lead batteries	1 710	✓	
16 05 06	H	Laboratory chemicals	1 630		✓
16 05 04	H	Gasses in pressure containers incl. halons containing dangerous substances	6 104		✓
16 02 13	H	Discarded equipment containing hazardous components	5 120	✓	
15 02 02	H	Absorbents, filt.mat., protective clothes contaminated by dangerous substances	360		✓
15 01 10	H	Packages containing dangerous substances	2 500		✓
13 05 07	H	Oily water from water separator	520		✓
13 02 06	H	Synthetic engine, gear and lubricating oils	450	✓	
13 02 05	H	mineral-based non-chlorinated engine, gear and lubricating oils	1 000	✓	
9 01 01	H	water-based developer and activator solutions	240		✓
8 03 17	H	waste printing toner containing dangerous substances	810		✓
8 01 17	H	wastes from paint or varnish removal containing organic solvents or other dangerous substances	170		✓
8 01 11	H	waste paint and varnish containing organic solvents or other dangerous substances	840		✓
		Total volume	**21 864**	**8 280**	**13 584**

VOLUMES OF MUNICIPAL AND BIODEGRADABLE WASTE GENERATED BY JAVYS

Catalogue N°	Type of waste	Waste characteristics	Volume (kg)	Reused (kg)	Disposed (kg)
20 03 01	O	Mixed municipal waste	116 840		✓
20 02 01	O	Biodegradable waste	185 394	✓	
		Total	**302 234**	**116 840**	**185 394**

OTHER AND HAZARDOUS WASTE GENERATED BY JAVYS IN THE PERIOD OF YEARS 2007-2010

(t) volume

Waste disposal and recycling is supplied by companies that were granted relevant permits and authorisations to dispose of individual types of waste. Municipal waste is disposed by the respective municipalities (Trnava, Bratislava, Jaslovské Bohunice) in compliance with their generally binding regulations.

MOCHOVCE

0,473 tons of municipal waste and 120 m^3 of waste from cleaning of septic tanks were generated in Mochovce site from NRWR and FL PWR nuclear facilities during the reporting year. SE, a.s. – plant EMO is in charge of wastes disposal and transportation from Mochovce site.

MAJOR INDUSTRIAL ACCIDENTS

JAVYS observes the key law concerning the major industrial accidents – the Act N°261/2002 Coll. on prevention of major industrial accidents as amended, as well as all directly and indirectly linked regulations and legislation.

Classification of JAVYS in regards to the valid legislation governing the major industrial accidents (ZPH)

Since January 23rd 2007, JAVYS belongs to the "A" category under the §5 of the Act N° 261/2002 Coll. on prevention of major industrial accidents. In 2010, provisions of the law applicable to the "A" category establishment and its implementing regulations were observed.

Due to decommissioning of 2nd unit of V1 NPP, since February 2010 JAVYS is not using nor storing the classified hazardous substance (VNL) – hydrazine hydrate, nor is the company planning to use it in future. New notification regarding the company classification was prepared based on the inventory control and reassessed calculations of VNL presence, which resulted in no obligation to classify it under the Act N°261/2002 Coll. anymore.

With regards to the requirements to monitor the treatment of particularly dangerous substances under the Water Act, and the requirement to monitor the presence of selected

hazardous substances in order to classify the establishment under the Act on prevention of major industrial accidents, “Management of Chemical Substances” software was developed and is operated since the 4Q 2008. It provides for comprehensive monitoring and evaluation of information related to the treatment of the so called “dangerous substances” not only from the major industrial accidents prevention point of view but also from the point of view of protection of soil, water and its related environment, as well as protection of life and assets of people. The adherence to the Act N°261/2002 was verified in May and June through a consolidated audit in compliance with §26 Section 5 Subsection c) of the Act N° 261/2002 Coll. that is due to be performed in “A” category establishments every 3 years. The coordinated audit was done by the respective state authorities – Slovak Environmental Inspection – Environmental Inspection Bratislava, Permanent Office in Nitra, Water Protection Inspection, District Office in Trnava – Dept of Civil Protection and Crisis Management, Labour Inspectorate Nitra, District Directorate of Fire fighting Corps in Trnava, Regional Public Health Office with the seat in Trnava and District Environmental Authority in Trnava.

The audit focused on the Chemical water treatment facility and Oil management facility. Also, documents related to major industrial accidents were checked and no insufficiencies were found by inspectors that would constitute violation of the Act N° 261/2002 Coll.

Environmental Management System

Environmental Management System (EMS) is one of the progressive management tools JAVYS applies for environmental protection. It is implemented and certified under ISO 14001:2004 standard - Environmental Management Systems, Requirements and Instructions for Use. Environmental policy and goals of the company are directed towards ongoing enhancement of its environmental behaviour and adherence to the environmental pollution prevention obligation.

Since its establishment in 2006 (merger of NPP SE-EBO V1 and SE-VYZ plants), the company is successful to fully adhere to the standard requirements, which is also confirmed by internal audits by DNV company and documented by the Environmental Management System certificate. Periodical and re-certification audits prove the fact that JAVYS deserves to own the EMS Certificate.

Six findings, twelve opportunities for improvement and seven positive findings were identified during the last periodical audit. Zero findings identified as major and small insufficiencies are an important efficiency indicator in enhancing the EMS introduced and operated in JAVYS.

List of Abbreviations

a.s.	Joint stock company
As	arsenic
BIDSF	Bohunice International Decommissioning Support Fund
BSC RAO	Bohunice radioactive waste processing and treatment centre (BR WTC)
Cd	cadmium
CO	Carbon dioxide
Co	cobalt
Corg.	Organic carbon
Cr	Chromium
Cu	Copper
ČSF	Pumping and filtration station
EU	European Union
FS KRAO	Final processing of liquid radioactive waste (FP LRW)
GBq	gigabequerel
HCl	Hydrogen chloride
HF	Hydrogen fluoride
Hg	Mercury
JAVYS, a.s.	Jadrová a vyraďovacia spoločnosť (Nuclear and Deocmmissioning Company)
JESS, a.s.	Jadrová energetická spoločnosť Slovenska (Slovak Nuclear Energy Company)
JE A1	Nuclear Power Plant A1 (NPP A1)
JE V1	Nuclear Power Plant V1(NPP V1)
JZ	Nuclear facility
KÚ ŽP	Regional Environmental Authority
KŠP	Corrosive and fission products
LaP	Limits and terms
MBq	megabequerel
Mn	manganese
MSVP	Interim spent fuel storage facility (ISFS)
MŽP SR	Ministry of Environment of the Slovak Republic

NaRK	Auxiliary Boiler Plant
Ni	nickel
NL	Hazardous substance
Nox	Nitrogen oxides
NV SR	Ordinance of the Government of the Slovak Republic
ObÚ ŽP	District Environmental Authority
Pb	Lead
PCELK	Total phosphorus
RAO	Radioactive waste (RW)
RÚ RAO	National Repository of Radioactive Waste (NRWR)
SO2	Sulphur dioxide
SE, a.s.	Slovenské elektrárne a.s.
SE-EBO	Slovenské elektrárne, NPP V2 in Jaslovské Bohunice
SE-EMO	Slovenské elektrárne, Mochovce NPP
SIŽP	Slovak Environmental Inspection
SKŽP	Environmental Protection Control System
Tl	tellurium
TSÚ RAO	Radioactive Waste Processing and Treatment Technology (RAW PTT)
TZL	Solid pollutants
ÚVZ SR	Public Health Authority of the Slovak Republic
VBK	Fibre-concrete container (FCC)
Zb	Collection of Laws
ZPH	Major industrial accidents
ŽP	environment