Baltic Marine Environment Protection Commission

Expert Group on Monitoring of Radioactive Substances in the Baltic Sea. Roskilde, Denmark, 21-23 May 2019

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Background

This document contains the information on air releases and liquid discharges from Leningrad NPP in 2018 provided by the Russian Federation.

Action

The Meeting is invited to **take note** of the information.

1. Gas and aerosol releases into the atmosphere for the RBMK-1000 (4 power units) and the VVER-1200 (1 power unit) (2018)

Regulated radionuclides, Bq						
H-3	C-14	Noble Radioactive Gases (any mixture)	I-131 (gas + aerosol)	Co-60	Cs-134	Cs-137
5,10 E8	1,19 E8	3,03 E14	5,20 E8	3,10 E8	5,85 E7	9,92 E7

Cases of exceeding the permissible and reference emissions for the day, month and quarter, indicating the reasons for the exceedances and the measures taken: **it was not**

Gas and Aerosol Releases in the Environment in 2007-2018

Period	Regulated radionuclides, Bq				
	Noble Radioactive Gases (any mixture)	I-131 (gas + aerosol)	Co-60	Cs-134	Cs-137
Total releases during the year 2018	2,82 E14	5,20 E8	3,10 E8	5,85 E7	9,92 E7
Total releases during the year 2017	2,82 E14	2,46 E8	2,52 E8	1,36 E8	2,03 E8
Total releases during the year 2016	3,34 E14	2,47 E8	2,12 E8	2,25 E7	3,49 E7
Total releases during the year 2015	3,88 E14	5,14 E8	1,45 E8	3,06 E7	5,46 E7
Total releases during the year 2014	3,00 E14	1,31 E8	1,52 E8	8,10 E6	2,54 E7
Allowed releases during the year	2,96 E15	5,84 E10	2,5 E9	1,4 E9	4,0 E9

Comment

In accordance with a conservative approach, in case if some radionuclides normalized in emissions are not determined by existing devices and methods at the NPP, the actual release of the standardized radionuclide is assigned the value 1/2 of multiplying the lower limit of the measurement (MDA) by the release volume

2. Liquid discharges

The Orders of the North-European MTU for the Supervision of Rostechnadzor Nuclear and Radiation Safety No. 123 and No. 124 (October 25, 2017) approved the Standards for allowable discharges of radioactive substances into water bodies by stationary sources of the Russian Concern for the Production of Electric and Thermal Energy at Nuclear Power Plants in the Industrial Site of the branch JSC «Concern Rosenergoatom» «Leningrad NPP» and the Permit No. CE-SRV-101-60 dated October 25, 2017 on the release of radioactive substances into water bodies. Regulations and Permits were introduced at the Leningrad Nuclear Power Plant by the order of 11/29/2018 No. 9/3183-Пх / Ф09

Activity of radionuclides allocated to the wastewater (2018) Outlet №11

Wastewater receiver (discharge point) Koporsky Bay The Gulf of Finland	Amount of discharged waters, thousand m3	Radionuclide	Radionuclide Activity	
			Actual Bq/year	Allowed Bq/year
Debalanced Waters	8,550	H-3	4,84E+10	2,13E+14
		Cr-51	2,99E+07	5,55E+13
		Mn-54	4,28E+06	1,16E+11
		Co-58	3,42E+06	7,09E+11
		Fe-59	5,56E+06	5,89E+10
		Co-60	3,90E+06	8,54E+10
		Zn-65	6,41E+06	1,29E+11
		Sr-89	1,28E+07	4,46E+12
		Sr-90	1,28E+07	4,13E+11
		Zr-95	5,56E+06	2,20E+11
		Ru-103	4,28E+06	6,67E+11
		Ru-106	2,99E+07	9,42E+10
		I-131	5,56E+06	5,22E+11
		Cs-134	4,28E+06	3,74E+10
		Cs-137	4,28E+06	5,93E+10
		Ce-141	6,41E+06	1,19E+12
		Ce-144	2,57E+07	1,49E+11

The index for overall discharge (with respect to allowed) is: 1,22 E-3

Activity of radionuclides allocated to the wastewater (2018)
Outlet №6a

Wastewater receiver (discharge point) Koporsky Bay The Gulf of Finland	Amount of discharged waters, **thousand m3**	Radionuclide	Radionuclide Activity, Bq/year	
			Actual Bq/year	Allowed Bq/year
Debalanced Waters	31,620	H-3	3,65E+12	2,13E+14
		Cr-51	9,41E+07	5,55E+13
		Mn-54	1,24E+07	1,16E+11
		Co-58	1,20E+07	7,09E+11
		Fe-59	1,98E+07	5,89E+10
		Co-60	1,16E+07	8,54E+10
		Zn-65	2,73E+07	1,29E+11
		Sr-89	5,42E+07	6,66E+12
		Sr-90	4,94E+07	1,26E+12
		Zr-95	2,41E+07	2,20E+11
		Ru-103	1,15E+07	6,67E+11
		Ru-106	9,70E+07	9,42E+10
		I-131	2,54E+07	1,30E+12
		Cs-134	1,13E+07	3,74E+10
		Cs-137	1,27E+07	5,93E+10
		Ce-141	2,29E+07	1,19E+12
		Ce-144	1,01E+08	1,49E+11
		I-132	4,98E+06	3,59E+13
		I-133	1,51E+06	6,39E+12
		I-134	1,96E+06	4,55E+13
		I-135	4,88E+06	2,05E+13

The index for overall discharge (with respect to allowed) is: 2,04 E-2

Liquid Discharges From Leningrad NPP in 2015, 2016 and 2017

Period	Debalanced Waters Discharged to	Amount of discharged waters, **thousand m3**	Amount of Discharged Radionuclides, Bq/year			
2017	Koporsky Bay, Gulf of Finland	There was not discharges of debalanced waters to the Koporsky Bay in 2017	Co-60		Cs-137	
			allowed	actual	allowed	actual
			3,90 E9	0	1,10 E9	0
			Cr–51		Mn–54	
			allowed	actual	allowed	actual
			1,40 E12	0	4,30 E10	0
			Co–58		H-3	
			allowed	actual	allowed	actual
			1,80 E10	0	3,30 E14	0
2016	Koporsky Bay, Gulf of Finland	4,550	Co-60		Cs-137	
			allowed	actual	allowed	actual
			3,90 E9	2,28 E6	1,10 E9	3,13 E6
			Cr–51		Mn–54	
			allowed	actual	allowed	actual
			1,40 E12	1,59 E7	4,30 E10	2,05 E6
			Co–58		H-3	
			allowed	actual	allowed	actual
			1,80 E10	2,28 E6	3,30 E14	2,33 E10
2015	Koporsky Bay, Gulf of Finland	There was not discharges of debalanced waters to the Koporsky Bay in 2015	Co-60		Cs-137	
			allowed	actual	allowed	actual
			3,90 E9	0	1,10 E9	0
			Cr–51		Mn–54	
			allowed	actual	allowed	actual
			1,40 E12	0	4,30 E10	0
			Co–58		H-3	
			allowed	actual	allowed	actual
			1,80 E10	0	3,30 E14	0

Source of liquid discharges - special capacity to purified condensate