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<b>Document title</b>	Inventory of discharge data from 2000-2019
<b>Code</b>	4-4Rev1
<b>Category</b>	INF
<b>Agenda Item</b>	4 – Data collection, databases and ongoing monitoring programme
<b>Submission date</b>	19.5.2021
<b>Submitted by</b>	Finland
<b>Reference</b>	

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Document was updated in 24.5.2021

#### Action

The Meeting is invited to consider the inventory of reported discharge data and check and validate the data.



STUK - RADIATION AND NUCLEAR SAFETY AUTHORITY

DISCHARGE REGISTER OF HELCOM/MORS

24.5.2021

DISCHARGES FROM NUCLEAR POWER PLANTS AND OTHER NUCLEAR FACILITIES

RISØ - AQUATIC DISCHARGES

NUCLIDE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
H3	9,60E+11	1,50E+11	2,50E+11	1,60E+11	2,80E+11	1,60E+11	9,80E+11	1,04E+12	3,87E+11	1,21E+11	5,40E+10	1,39E+11	2,65E+11	6,90E+10	9,60E+09	5,00E+10	3,00E+09	8,80E+09	3,50E+09	6,90E+08

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The research reactor was shut down in September 2000

STUK - RADIATION AND NUCLEAR SAFETY AUTHORITY

DISCHARGE REGISTER OF HELCOM/MORS  
19.5.2021

DISCHARGES FROM NUCLEAR POWER PLANTS AND OTHER NUCLEAR FACILITIES

PALDISKI-AQUATIC DISCHARGES

NUCLIDE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
H3	5,77E+08	2,06E+08	1,06E+08	1,83E+05	5,75E+09					1,66E+05	1,20E+05	2,08E+06	2,60E+06		1,10E+06			3,10E+06	1,37E+06	
CO60	8,70E+03	1,04E+05	5,92E+04																	
SR90	1,94E+06	1,24E+06	5,29E+05	3,75E+04	1,75E+07					3,50E+04	1,97E+04	2,60E+06	3,30E+06		3,09E+06			1,10E+06	2,89E+06	
CS137	4,69E+06	2,69E+06	2,95E+06	1,14E+05	1,39E+08					1,13E+05	1,02E+05	2,27E+05	1,50E+05		5,00E+05			3,85E+04	2,30E+05	
EU152		5,72E+04																		
AM241																		1,23E+04		

STUK - RADIATION AND NUCLEAR SAFETY AUTHORITY

DISCHARGE REGISTER OF HELCOM/MORS  
19.5.2021

DISCHARGES FROM NUCLEAR POWER PLANTS AND OTHER NUCLEAR FACILITIES

LOVIISA - AQUATIC DISCHARGES

NUCLIDE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
H3	1,10E+13	1,40E+13	1,30E+13	1,50E+13	1,70E+13	1,40E+13	1,70E+13	1,63E+13	1,71E+13	2,07E+13	1,73E+13	1,49E+13	1,51E+13	1,59E+13	1,26E+13	1,64E+13	1,34E+13	1,47E+13	1,52E+13	1,45E+13
BE7								4,37E+04		1,80E+05										
CR51		6,60E+05				4,70E+06	2,00E+07	3,97E+06	3,07E+07	1,05E+06	9,03E+05		2,95E+05			3,33E+06	3,65E+06	2,38E+07	3,82E+06	5,69E+05
MN54	6,60E+05	7,50E+06	5,00E+05	2,50E+06	4,30E+06	1,10E+07	1,70E+07	1,05E+07	1,00E+07	4,80E+07	8,98E+06	2,40E+06	4,88E+06	7,76E+06	2,50E+06	1,52E+06	2,21E+06	6,41E+06	2,47E+07	9,10E+06
CO58	2,20E+06	2,80E+06	8,10E+04	5,00E+05	7,50E+06	2,30E+07	4,00E+07	2,15E+07	2,57E+07	1,35E+07	1,31E+07	3,76E+06	1,03E+07	9,37E+06	5,51E+06	4,74E+06	5,81E+06	9,32E+06	9,75E+06	1,85E+06
FE59		3,10E+03			1,90E+06	2,90E+06	4,30E+06		1,99E+06		2,15E+06		2,62E+05					2,08E+05	1,23E+05	
CO60	2,70E+06	5,20E+08	4,90E+05	1,30E+06	3,10E+08	2,20E+07	3,00E+07	1,43E+07	2,80E+07	5,37E+08	1,62E+07	5,20E+06	1,29E+07	3,26E+08	7,50E+06	2,71E+06	6,61E+06	1,90E+08	1,03E+07	1,90E+06
SR89														2,39E+05						1,67E+05
SR89§										6,65E+06										
SR90		2,70E+03												3,09E+06						
ZR95		1,70E+04		1,00E+06		4,60E+06	7,40E+06	2,40E+06	4,24E+06	2,84E+05	2,15E+06	1,03E+06	1,04E+07	5,83E+05	5,06E+05	1,85E+05	1,10E+06	2,36E+05	2,76E+06	5,78E+05
NB95		2,70E+04				6,50E+06	1,30E+07	1,76E+06	5,93E+06	7,21E+05	5,69E+06	1,11E+06	3,39E+06	2,17E+06	2,91E+06		1,58E+06		3,11E+06	1,53E+06
RU103																	1,85E+05			
AG108M										6,80E+06				5,40E+06					3,35E+06	
AG110M	2,90E+07	1,20E+08	9,80E+06	9,10E+06	1,90E+08	4,80E+07	6,60E+07	4,09E+07	6,06E+07	2,09E+08	5,05E+07	3,46E+07	7,26E+07	2,77E+08	2,77E+07	2,44E+07	5,93E+07	2,10E+08	7,61E+07	3,61E+07
TE123M	5,10E+05			1,10E+04		1,20E+06	2,60E+06	1,33E+06	3,73E+06	1,10E+06	1,70E+06	8,64E+05	3,49E+06	8,11E+05	2,82E+06	6,70E+05	1,48E+06	1,28E+06	1,13E+06	2,16E+05
SB124	2,20E+07	1,10E+08	3,30E+07	2,60E+07	6,50E+07	8,30E+07	9,20E+07	1,03E+08	4,92E+07	7,70E+07	4,73E+07	1,22E+08	1,69E+08	8,65E+07	3,85E+07	4,70E+07	5,24E+07	6,63E+07	1,86E+07	2,24E+07
SB125		1,50E+08			1,50E+08		9,10E+05			2,17E+08		5,28E+05	1,16E+06	3,41E+08	1,96E+05				6,35E+08	
I131									4,90E+05	3,70E+06		3,29E+05		1,85E+05						
CS134	4,60E+06	5,60E+07	5,00E+05	2,50E+05	8,00E+06	1,30E+04	8,30E+05	9,62E+05	8,05E+05	5,00E+07	1,15E+07	3,20E+06	2,01E+06	4,37E+06	1,02E+05				1,15E+07	
CS137	3,80E+07	3,00E+08	4,00E+07	3,50E+07	1,30E+08	1,60E+07	1,30E+07	1,07E+07	6,62E+06	5,79E+08	1,44E+07	8,89E+06	1,11E+07	1,23E+08	2,40E+06	2,84E+06	4,31E+06	4,53E+08	6,53E+06	4,08E+06
HF181												5,50E+05			1,88E+05		2,20E+05		1,98E+05	

§ Sr-89 and Sr-90 together

## STUK - RADIATION AND NUCLEAR SAFETY AUTHORITY

DISCHARGE REGISTER OF HELCOM/MORS  
19.5.2021

## DISCHARGES FROM NUCLEAR POWER PLANTS AND OTHER NUCLEAR FACILITIES

## LOVIISA - AIRBORNE DISCHARGES

NUCLIDE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
H3	2,00E+11	1,80E+11	2,20E+11	2,20E+11	2,20E+11	1,90E+11	1,80E+11	1,69E+11	7,51E+10	4,38E+11	2,79E+11	1,86E+11	2,13E+11	1,87E+11	1,33E+11	1,47E+11	1,65E+11	1,86E+11	1,58E+11	1,45E+11
C14	2,80E+11	3,00E+11	3,70E+11	3,20E+11	3,20E+11	2,70E+11	1,50E+11	2,42E+11	3,29E+11	3,35E+11	3,23E+11	3,24E+11	3,39E+11	4,63E+11	4,00E+11	4,15E+11	3,93E+11	3,55E+11	3,56E+11	3,46E+11
CR51	5,80E+06		9,60E+05	1,90E+06	3,20E+06	9,60E+05	7,10E+06	2,80E+05	7,88E+06	2,70E+06	2,06E+06	2,23E+06	2,02E+05	2,12E+06	4,29E+05	4,66E+05	2,25E+06		2,36E+06	2,30E+06
MN54	2,30E+06	5,80E+05	1,60E+06	7,60E+05	1,20E+06	7,70E+05	6,80E+05	3,16E+05	1,00E+06	5,62E+05	3,56E+05	3,26E+05	4,63E+04	1,56E+05			1,76E+05		2,10E+05	1,67E+05
CO58	5,50E+06	1,10E+06	4,90E+06	5,90E+06	1,00E+07	8,00E+06	6,20E+06	4,10E+06	4,19E+06	5,01E+06	1,00E+06	2,29E+06	3,84E+05	1,02E+06	9,51E+05	1,37E+06	9,67E+05	8,65E+05	2,11E+06	7,64E+05
FE59					2,90E+05		7,90E+04		1,99E+05											
CO60	6,00E+06	1,00E+06	5,50E+06	2,50E+06	3,60E+06	2,10E+06	1,60E+06	1,12E+06	1,60E+06	6,89E+05	7,66E+05	3,26E+05	1,15E+05	4,66E+05	5,98E+05	2,82E+05	3,85E+05	8,72E+04	7,11E+05	4,25E+05
SR89§										3,15E+05										
ZR95	7,70E+05		5,70E+05	1,60E+05	9,50E+05	2,50E+05	1,30E+05	2,52E+04	4,74E+05		1,98E+05			2,34E+05	1,59E+05		1,90E+05		4,40E+05	4,32E+04
NB95	2,20E+06	8,10E+04	1,60E+06	2,00E+05	1,80E+06	5,90E+05	6,20E+05		1,15E+06	5,20E+04	4,29E+05			2,94E+04	6,50E+05		1,47E+05	9,48E+04	1,77E+06	7,78E+04
RU103								2,61E+04					3,10E+04	1,31E+05	4,79E+05		1,05E+05		5,28E+04	7,43E+04
AG110M	1,90E+07	1,70E+07	1,20E+07	8,10E+06	1,40E+07	4,60E+06	7,80E+06	3,55E+06	4,30E+06	1,31E+07	3,26E+06	5,95E+06	1,92E+06	2,90E+06	4,00E+06	3,98E+06	7,90E+06	8,38E+06	1,29E+07	5,06E+06
TE123M	7,60E+04		4,10E+04		1,90E+05			1,16E+04	3,12E+05	3,19E+05	4,31E+04	4,19E+05	3,18E+05	3,95E+05	5,70E+05	1,54E+05	1,95E+05	2,92E+05	1,52E+06	3,79E+05
SB124	7,80E+06	3,90E+06	8,00E+06	6,20E+06	1,40E+07	8,90E+06	7,60E+06	4,92E+06	4,60E+06	1,77E+06	1,37E+06	5,69E+06	1,96E+06	2,21E+06	2,83E+06	1,75E+06	1,67E+06	1,15E+06	1,85E+06	8,17E+05
I131			9,80E+05	3,50E+06	1,10E+07	6,80E+06		7,34E+05	1,59E+06	2,62E+07	4,84E+07	8,00E+05	2,11E+05	2,42E+07	2,88E+06	3,74E+06	8,86E+05	5,24E+05	3,49E+06	4,21E+05
CS134										2,07E+04										
CS137	9,90E+04		3,00E+04	2,90E+04			1,20E+04		1,10E+04	3,70E+06							4,85E+04			1,50E+05
HF181																	8,25E+04		1,04E+05	

§ Sr-89 and Sr-90 together

## STUK - RADIATION AND NUCLEAR SAFETY AUTHORITY

## DISCHARGE REGISTER OF HELCOM/MORS

19.5.2021

## DISCHARGES FROM NUCLEAR POWER PLANTS AND OTHER NUCLEAR FACILITIES

## OLKILUOTO - AQUATIC DISCHARGES

NUCLIDE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
H3	1,00E+12	9,00E+11	1,00E+12	1,10E+12	1,50E+12	2,20E+12	2,50E+12	2,41E+12	2,39E+12	1,85E+12	1,50E+12	1,31E+12	1,31E+12	1,46E+12	1,56E+12	2,05E+12	2,33E+12	2,46E+12	1,62E+12	1,59E+12
CR51	7,70E+07	1,50E+08	3,40E+07	1,50E+08	7,80E+07	7,00E+07	6,50E+07	3,83E+07	2,26E+07	1,14E+07	2,64E+07	3,09E+06	1,65E+07		2,81E+06	1,14E+06	1,07E+07	2,67E+07	5,30E+06	5,24E+06
MN54	4,90E+07	1,60E+07	3,50E+07	3,40E+07	4,20E+07	6,80E+07	8,60E+07	1,00E+08	6,51E+07	3,65E+07	4,68E+07	1,35E+07	4,93E+07	1,43E+07	1,73E+07	2,28E+07	4,17E+07	6,26E+07	3,91E+07	9,19E+06
CO58	1,10E+08	6,10E+07	4,80E+07	2,70E+07	3,30E+07	7,90E+07	4,10E+07	3,24E+07	3,20E+07	1,23E+07	1,64E+07	2,91E+06	6,17E+06	8,57E+05	1,53E+06	5,80E+06	5,06E+05	2,21E+07	6,31E+06	2,66E+06
FE59	2,90E+06	2,60E+06			4,70E+06	6,30E+06	5,50E+06	1,07E+07	1,01E+07	1,30E+06	9,59E+05	1,72E+06	5,06E+06	1,14E+06	5,80E+05		6,21E+06	1,16E+07	1,47E+06	1,13E+05
CO60	5,00E+08	3,00E+08	4,80E+08	2,80E+08	2,40E+08	3,20E+08	3,00E+08	2,12E+08	1,49E+08	9,07E+07	1,06E+08	5,27E+07	9,59E+07	5,47E+07	3,51E+07	5,68E+07	6,93E+07	8,06E+07	4,77E+07	3,30E+07
SR89																				2,02E+06
SR90																				3,40E+06
ZR95	6,80E+06	1,50E+07	7,30E+06	8,20E+05	4,10E+06	6,60E+06	2,40E+06	4,31E+07	1,79E+06	2,83E+06			1,91E+06	2,50E+05						3,65E+05
NB95	1,40E+07	2,60E+07	1,30E+07	5,00E+05	6,70E+06	1,20E+07	3,60E+06	6,49E+07	2,33E+06	5,45E+06			3,52E+06	1,53E+05			1,64E+05	2,45E+05	1,27E+06	2,86E+05
RU103																	1,28E+05		2,17E+05	
SN113			7,50E+05		2,40E+05															
SB124	2,10E+07	2,40E+07	4,00E+05	9,50E+05	5,50E+06	1,10E+07	1,50E+07	1,15E+07	9,81E+06	1,51E+06	4,25E+05	5,17E+05	7,62E+05							8,65E+05
SB125	4,80E+06	1,80E+07	3,50E+06	1,60E+07	2,00E+06	2,80E+07	1,90E+07	7,55E+06	1,03E+07	6,97E+06	1,28E+06	1,35E+06	2,72E+06		3,34E+06	8,38E+05		5,65E+05		1,89E+06
SN125	7,80E+06								1,12E+06	6,32E+05	8,58E+06									
I131	2,90E+07	6,50E+06	3,40E+06	2,70E+05	2,60E+05	5,70E+06	1,40E+07	3,32E+05			1,78E+06			8,15E+05			5,31E+06	2,80E+06	6,84E+06	1,55E+07
CS134	4,30E+07	5,50E+07	1,20E+07	7,30E+06	2,10E+06	1,40E+07	1,00E+07	4,54E+06	6,58E+05	3,37E+05	1,08E+05	4,26E+06		1,60E+06	1,75E+05	3,01E+05	6,58E+05	3,87E+06	1,56E+06	3,87E+06
CS136	3,60E+05																			
CS137	2,10E+08	1,90E+08	1,20E+08	7,60E+07	6,20E+07	7,80E+07	6,20E+07	3,85E+07	3,61E+07	3,13E+07	3,05E+07	3,07E+07	1,93E+07	1,73E+07	1,67E+07	1,50E+07	1,54E+07	4,27E+07	1,54E+07	2,93E+07
BA140																				8,24E+05
CE141	2,30E+05																1,75E+06	7,32E+05	1,17E+06	1,19E+05





STUK - RADIATION AND NUCLEAR SAFETY AUTHORITY

DISCHARGE REGISTER OF HELCOM/MORS  
19.5.2021

DISCHARGES FROM NUCLEAR POWER PLANTS AND OTHER NUCLEAR FACILITIES

GREIFSWALD - AQUATIC DISCHARGES

NUCLIDE	2000	2001	2002	2003	2004	2005	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
H3	1,00E+10	8,40E+09	3,00E+09	3,10E+09			2,10E+09	2,70E+09	8,70E+08	4,70E+08	4,20E+08	9,10E+08	6,30E+08	1,10E+08	1,50E+07		4,60E+07		3,10E+07
FE55							4,90E+07												
CO60	6,70E+06	2,10E+06	4,60E+05	7,70E+06	1,70E+06	9,00E+06	1,80E+07	1,90E+06			1,10E+03								
NI63							7,20E+07							4,00E+06	2,60E+05				
SR90				1,90E+06														6,20E+04	
CS137	1,00E+07	1,10E+07	1,70E+07	1,50E+08	5,40E+07	1,30E+08	4,00E+07	9,80E+06		3,60E+05	2,20E+05	8,90E+04	1,60E+06						

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The power plant was shut down in 1990

## STUK - RADIATION AND NUCLEAR SAFETY AUTHORITY

## DISCHARGE REGISTER OF HELCOM/MORS

19.5.2021

## DISCHARGES FROM NUCLEAR POWER PLANTS AND OTHER NUCLEAR FACILITIES

## IGNALINA - AQUATIC DISCHARGES

NUCLIDE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
H3	8,70E+11	5,70E+11	9,70E+11	6,80E+11		3,24E+12	5,76E+11	6,48E+11	1,17E+12	1,30E+12	1,81E+10	2,24E+10	2,11E+10	1,92E+10	5,69E+09	1,85E+10	6,14E+10	4,61E+10	8,64E+10	6,28E+10
CR51		8,00E+07		9,00E+05																
MN54	3,00E+05	6,80E+07	4,00E+05	2,40E+06	5,80E+05	9,00E+04			2,07E+07	4,23E+04		1,64E+04								
CO58		1,50E+07		4,00E+05					3,07E+07											
FE59		9,20E+07		1,90E+06																
CO60	4,00E+07	4,20E+08	8,10E+06	9,00E+05	1,79E+07	1,10E+07		1,07E+07	1,41E+07	1,06E+07	2,54E+06	9,06E+06	4,65E+06	5,08E+06	1,45E+05	1,83E+06	5,10E+05	9,62E+05	7,74E+06	1,46E+06
SR89	4,60E+08	1,40E+08																		
SR90	3,50E+08	9,10E+07																		
ZR95		8,40E+07		4,00E+05	2,10E+05															
NB95		1,30E+08		7,00E+05	2,10E+05		4,79E+07													
I131					3,10E+05															
CS134		1,20E+06		2,00E+05				5,87E+07	6,86E+06							1,44E+05				
CS137	4,60E+07	5,10E+08	1,20E+09	3,90E+08	2,45E+08	2,10E+07	2,49E+07	6,11E+08	2,27E+08	6,91E+06	1,84E+07	9,12E+06	4,90E+05	1,01E+07	1,56E+06	2,25E+07	3,59E+07	2,80E+07	3,08E+07	9,44E+06

## IGNALINA - AIRBORNE DISCHARGES

NUCLIDE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
H3												6,23E+09	4,82E+09	4,14E+09	3,94E+09	3,11E+09	3,86E+09	1,72E+09		1,42E+09
C14												3,52E+09	2,07E+09	4,39E+09	2,20E+09	4,07E+09	1,25E+09	1,15E+09		4,03E+09
CR51		3,10E+07	1,20E+07	1,90E+07	8,62E+06	2,00E+03	3,65E+07	2,15E+07	3,36E+07	1,52E+07	1,22E+05									
MN54	3,10E+08	1,80E+08	9,50E+07	1,40E+08	1,09E+08	3,33E+07	5,60E+07	2,57E+07	4,44E+07	1,99E+07	9,18E+05	2,52E+05	4,00E+03	1,31E+04						
CO58	5,60E+06	9,90E+06	4,20E+06	1,10E+07	6,44E+06	2,80E+06	3,97E+06	1,74E+06	2,63E+06	3,21E+05		5,30E+04								
FE59	4,40E+07	6,00E+07	2,40E+07	3,20E+07	5,25E+06	1,05E+07	2,26E+07	1,04E+07	2,11E+07	2,40E+06										
CO60	4,70E+08	3,00E+08	1,90E+08	2,30E+08	2,32E+08	1,03E+08	1,02E+08	8,89E+07	9,01E+07	3,99E+07	1,70E+07	2,09E+07	3,32E+07	1,37E+07	7,31E+06	2,75E+07	7,11E+06	1,16E+07	3,93E+07	2,16E+07
ZN65		2,70E+06	4,70E+05	1,90E+06	1,92E+05	1,60E+07	2,34E+07		2,78E+05											
SR89	4,40E+07	3,30E+07	4,80E+07	5,90E+07	6,18E+07	5,50E+07	2,87E+07	5,43E+07	8,14E+07	5,07E+07	4,90E+06	3,15E+06	2,19E+06	1,71E+06						
SR90	4,50E+07	4,20E+07	5,90E+07	4,50E+07	5,97E+07	5,60E+07	5,92E+07	6,15E+07	5,89E+07	6,35E+07	7,50E+06	3,22E+06	2,82E+06	3,69E+06	5,22E+06	3,85E+06	3,91E+06	2,66E+06	2,76E+06	1,02E+06
NB94												5,55E+05			6,71E+02				6,94E+04	1,38E+05
ZR95	4,90E+07	3,30E+07	8,80E+06	1,20E+07	9,12E+06	9,12E+06	2,62E+06	1,54E+06	6,99E+06	1,04E+06	2,13E+05	4,80E+04								
NB95	9,00E+07	1,40E+08	4,20E+07	4,60E+07	4,31E+07	1,30E+06	1,40E+07	6,32E+06	9,84E+06	6,72E+06	3,73E+05									
I131	2,60E+09	2,00E+09	2,50E+09	1,40E+09	1,06E+10	6,80E+09	7,80E+09	8,49E+09	4,75E+07	9,38E+08	1,63E+05									
CS134	1,30E+07	1,80E+07	2,80E+07	1,50E+07	1,33E+07	1,22E+06	2,27E+06	3,57E+06	1,10E+07	1,40E+06	2,64E+05	7,60E+04	1,70E+05			9,13E+04				
CS136				4,00E+04	2,50E+04	5,00E+03			3,18E+05	3,70E+04										
CS137	1,30E+08	1,80E+08	1,20E+08	9,30E+07	6,61E+07	1,27E+08	1,02E+08	3,16E+07	4,47E+07	1,72E+07	8,08E+06	2,93E+06	7,39E+06	9,37E+06	1,20E+07	1,81E+07	4,62E+07	3,98E+07		6,02E+07
EU152																7,46E+04				
EU154																5,85E+04				

Unit I of the power plant was shut down on 31 December 2004

Unit II of the power plant was shut down on 31 December 2009

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## DISCHARGES FROM NUCLEAR POWER PLANTS AND OTHER NUCLEAR FACILITIES

## LENINGRAD (SOSNOVY BOR) - AQUATIC DISCHARGES

NUCLIDE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
H3																	2,33E+10		3,70E+12	8,86E+12
CR51											1,85E+06								1,24E+08	2,32E+08
MN54											3,45E+05								1,67E+07	7,05E+07
CO58											7,50E+04								1,54E+07	7,12E+07
FE59																			2,54E+07	6,02E+07
CO60	2,25E+05	2,15E+05	6,22E+04	4,97E+05	8,05E+05		8,45E+05	5,33E+05		3,06E+06	7,43E+05								1,55E+07	5,26E+07
ZN65																			3,37E+07	8,17E+07
SR89																			6,70E+07	4,49E+08
SR90																			6,22E+07	3,33E+08
ZR95																			2,97E+07	7,85E+07
RU103																			1,58E+07	3,69E+07
RU106																			1,27E+08	2,07E+08
I131																			3,10E+07	6,85E+07
CS134																			1,56E+07	3,41E+07
CS137	7,22E+03	1,98E+05	1,66E+05	1,03E+05	1,05E+05	6,66E+04	9,73E+05	3,21E+06		3,21E+06	6,75E+05						3,13E+06		1,70E+07	3,76E+07
CE141																			2,93E+07	5,74E+07
CE144																			1,27E+08	2,17E+08

## LENINGRAD (SOSNOVY BOR) - AIRBORNE DISCHARGES

NUCLIDE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
H3																			5,10E+08	5,10E+11
C14																			1,19E+08	2,43E+12
CR51	8,36E+08	7,54E+08																		
MN54	1,15E+08	1,02E+08																		9,32E+07
CO60	2,18E+08	1,88E+08	1,89E+08	1,51E+08	1,59E+08	1,90E+08	1,96E+08	1,25E+08	1,62E+08	8,37E+07	2,50E+08	2,66E+08	1,01E+08	7,50E+07	1,52E+08	1,45E+08	2,12E+08	2,52E+08	3,10E+08	1,68E+08
ZN65																				2,95E+06
SR89	2,85E+07	1,96E+07																		
SR90	5,18E+06	4,07E+06	3,85E+06																	
ZR95																				1,69E+07
I131	1,65E+09	1,12E+09	1,06E+09	1,15E+09	9,04E+08	9,85E+08	8,89E+08	1,70E+09	1,70E+08	8,19E+08		4,48E+07	2,27E+07		1,31E+08	5,14E+08	2,47E+08	2,46E+08	5,20E+08	2,36E+08
CS134			7,10E+07	5,89E+07	5,18E+07	5,00E+07	3,72E+07	1,46E+07	5,67E+06	3,50E+07	1,79E+07	3,74E+06	3,74E+05	3,13E+06	8,10E+06	3,06E+07	2,25E+07	1,36E+08	5,85E+07	5,34E+07
CS137	6,22E+08	4,90E+08	4,90E+08	1,56E+08	2,17E+08	1,55E+08	1,70E+08	1,53E+08	7,85E+07	1,32E+08	4,40E+07	6,04E+07	3,29E+07	8,13E+06	2,54E+07	5,46E+07	3,49E+07	2,03E+08	9,92E+07	7,49E+07

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FORSMARK - AQUATIC DISCHARGES

NUCLIDE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
H3	1,40E+12	1,85E+12	1,28E+12	1,26E+12	1,27E+12	1,75E+12	2,51E+12	3,67E+12	2,93E+12	1,62E+12	1,31E+12	1,24E+12	9,20E+11	1,23E+12	1,36E+12	1,94E+12	8,10E+11	1,28E+12	1,07E+12	1,00E+12	
SC46																		4,91E+04	4,00E+05	3,88E+05	
CR51	3,68E+08	3,84E+08	8,50E+07	2,39E+08	6,10E+07	2,24E+07													6,90E+05		
MN54	1,55E+09	8,20E+08	4,24E+08	4,81E+08	6,65E+07	6,37E+06	2,28E+04	1,82E+05			1,07E+06						7,90E+05		3,70E+04	2,40E+04	
FE55																		4,60E+05	1,60E+04	1,03E+04	
CO58	4,53E+08	5,05E+08	3,89E+08	8,77E+08	2,57E+08	2,21E+07	1,55E+06	1,07E+06	3,42E+06	4,14E+06	6,00E+06		7,10E+05	4,98E+05	6,11E+05	1,40E+06	1,50E+07	1,03E+06	4,30E+05	1,98E+06	
FE59	1,08E+08	7,11E+07																			
CO60	6,65E+09	4,27E+09	3,41E+09	4,41E+09	1,19E+09	3,01E+08	6,62E+07	9,00E+06	1,80E+07	9,50E+06	1,45E+07	9,30E+06	8,40E+06	4,90E+06	3,50E+06	7,70E+06	6,55E+07	1,95E+07	1,51E+07	2,46E+07	
NI63												1,24E+06	3,60E+05	1,45E+05	1,48E+05	1,37E+05	1,21E+06	4,07E+05	2,00E+05	3,48E+05	
ZN65	5,50E+08	7,10E+07	7,30E+07	7,20E+07	1,01E+07																
SR90			1,52E+08									3,36E+05									
ZR95					3,97E+06			1,92E+05					2,40E+06								
NB95	2,14E+07	2,24E+07		2,18E+06	3,91E+06		4,58E+05	1,20E+05	3,51E+04		2,46E+05	4,80E+06									
AG110M	2,12E+08	2,34E+05	2,80E+07	1,63E+08	1,18E+07	2,20E+06	3,79E+05	2,58E+06	5,65E+05								1,40E+05				
SB124	7,61E+08	5,10E+08		1,72E+08	9,77E+07		6,26E+06	2,17E+07	1,72E+07	9,05E+07	4,20E+06	1,10E+06	3,70E+06	3,60E+06	7,08E+06	2,30E+06		2,86E+06	2,00E+06	6,19E+05	
SB125		8,37E+08	3,50E+08	1,10E+08	1,77E+08				5,29E+05			8,50E+06					9,30E+04	1,29E+05	9,10E+04	1,62E+06	
I131	2,21E+08	2,86E+08	3,36E+08	6,39E+07					1,61E+06									6,38E+05		1,42E+06	
CS134	1,73E+09	1,98E+08	5,07E+08	6,41E+07	7,18E+06	1,94E+05	2,95E+05	1,10E+06	3,73E+05	4,57E+06	7,43E+06	3,70E+06	8,40E+05	5,90E+04		1,10E+05	8,70E+04	2,00E+05	1,32E+06	7,02E+06	
CS137	4,66E+09	1,12E+09	1,14E+09	6,96E+08	2,57E+08	9,94E+08	6,76E+07	1,32E+07	9,66E+06	2,14E+07	1,84E+07	1,71E+07	1,47E+07	8,40E+06	7,66E+06	5,16E+06	5,50E+06	1,11E+07	1,19E+07	2,40E+07	
CE141			1,80E+06	7,70E+06								5,80E+04	1,20E+05	3,50E+05	1,44E+04						
U235												8,20E+02	2,92E+04	2,30E+04	1,03E+05	4,50E+05	1,50E+05	3,52E+04		6,66E+04	
U238												2,60E+03				1,80E+05	5,80E+04			4,05E+04	
PU238						1,11E+03	1,16E+05	3,98E+03	9,50E+04	7,40E+05	6,20E+05	3,02E+05	1,02E+06	2,90E+05		1,50E+04	7,00E+04		3,90E+04	5,04E+04	
PU238*		7,20E+04	6,20E+04																		
PU239												2,40E+04									
PU239&	5,51E+05													3,09E+04		2,40E+04			2,70E+04	5,46E+04	
AM241				5,46E+05								3,70E+04	7,30E+04	2,09E+04		9,20E+02	9,30E+02		2,30E+03	2,84E+03	
CM242	6,75E+04		3,90E+04		1,04E+06	1,75E+02	2,15E+04		2,05E+05	9,85E+04	2,61E+05	6,07E+05	1,21E+06	1,32E+05	6,45E+04	1,16E+05	9,60E+04	8,02E+04		2,82E+05	
AM243				4,11E+05	8,32E+05	1,44E+03	8,43E+05	2,35E+05	6,46E+05	1,05E+06	1,46E+06	3,44E+05	7,80E+05	1,49E+06	3,35E+05	3,30E+05	5,00E+05	6,07E+05		6,50E+05	5,06E+05
CM243												1,36E+03	2,13E+03	4,10E+02		5,70E+01			1,86E+02	3,66E+02	
CM244	1,26E+05		8,70E+04	5,44E+05	9,67E+05	6,43E+02	2,46E+05	4,37E+04	3,62E+05	4,59E+04	5,26E+04	3,37E+05	5,02E+05	9,70E+04		1,40E+04			3,77E+04	7,40E+04	

\* Pu-238,Am-241  
& Pu-239,Pu-240

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DISCHARGES FROM NUCLEAR POWER PLANTS AND OTHER NUCLEAR FACILITIES

FORSMARK - AIRBORNE DISCHARGES

NUCLIDE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
H3			5,80E+11	6,90E+11	5,19E+11	7,10E+11	1,41E+12	1,30E+12	1,01E+12	8,11E+11	5,53E+11	7,60E+11	1,02E+12	6,20E+11	5,28E+11	5,20E+11	4,70E+11	5,21E+11	5,60E+11	6,99E+11
C14			2,65E+12	2,25E+12	2,22E+12	2,74E+12	2,22E+12	2,49E+12	2,08E+12	1,96E+12	1,96E+12	2,11E+12	1,77E+12	1,73E+12	1,91E+12	1,63E+12	1,62E+12	1,72E+12	1,73E+12	1,93E+12
CR51	4,03E+07	1,18E+08	6,43E+07	3,71E+07	1,83E+07	7,00E+06	1,52E+07	4,05E+07	6,73E+07	1,94E+08	1,78E+08	1,36E+07	6,90E+05	5,70E+06	2,07E+07	1,32E+07	2,30E+07	5,48E+07	5,82E+07	1,46E+08
MN54	3,24E+07	3,30E+07	2,09E+07	1,24E+07	4,84E+06	5,53E+05	9,46E+05	2,22E+06	2,79E+06	2,29E+06	7,51E+06	1,77E+06	1,30E+06	6,00E+05	2,69E+06	1,08E+07	1,04E+06	1,88E+06	9,31E+05	2,30E+06
CO57																			6,10E+05	
CO58	2,10E+07	4,82E+07	4,90E+07	2,91E+07	2,62E+07	9,37E+06	1,56E+07	1,33E+07	4,38E+07	1,45E+08	1,65E+08	1,63E+07	8,41E+06	6,84E+06	1,95E+07	1,82E+07	2,54E+07	4,23E+07	3,55E+07	9,50E+07
FE59	6,47E+06																		1,44E+06	
CO60	1,36E+08	1,15E+08	1,13E+08	1,05E+08	3,88E+07	3,81E+07	8,32E+07	5,38E+07	6,54E+07	1,37E+08	9,68E+07	1,25E+08	5,96E+07	3,05E+07	5,98E+07	6,92E+07	5,57E+07	5,25E+07	4,46E+07	7,98E+07
ZN65	1,95E+07	5,91E+06	1,10E+07	6,15E+06		6,09E+06	7,39E+06					2,40E+06								
KR85													1,72E+11	2,48E+11	1,24E+11	1,24E+11	1,30E+11	3,16E+11	2,46E+11	1,81E+11
SR90			9,90E+06																	
ZR95														6,10E+05					2,60E+06	
NB95			7,50E+05							1,11E+06			6,00E+05	7,10E+05	1,23E+06	1,40E+06			3,60E+06	
RU103																			1,70E+05	
AG110M			3,60E+06										1,64E+07							
SN113													3,30E+05						7,20E+04	
SN117M											5,80E+05									
TE123M													2,60E+05							
SB124	1,05E+07				5,53E+05	1,15E+04				3,10E+06	1,69E+06		2,33E+06				8,30E+04		2,50E+05	
SB125																	5,80E+04	1,70E+05	1,20E+05	
I131	4,46E+07	1,09E+08	3,82E+08	4,47E+07	2,09E+07	1,28E+07	1,60E+08	1,81E+07	3,45E+07	1,43E+06	2,41E+08	5,36E+08	3,21E+08	2,75E+08	2,85E+08	5,70E+08	7,11E+07	1,13E+09	5,30E+08	1,32E+09
BA131																			8,90E+04	
XE131M	3,66E+11	3,34E+12	4,25E+13	1,50E+11	1,04E+11	1,44E+11	2,64E+11	2,92E+12	6,56E+10	9,32E+11	5,57E+11		5,80E+11		6,28E+11	3,10E+11	4,40E+11	3,21E+11	6,70E+11	
CS134				2,18E+05						6,56E+05										6,10E+05
CS136																				5,16E+05
CS137	9,14E+05		1,09E+06	3,11E+06			1,09E+05	1,13E+06	6,17E+04	5,23E+05			6,96E+06		1,59E+06	1,90E+05	9,60E+04	3,01E+05	4,30E+04	1,61E+06
BA140																			8,50E+05	
U235												2,19E+03	2,00E+03	8,90E+02	9,71E+02	2,17E+03	1,30E+03	3,84E+02	1,33E+03	2,48E+03
U238												2,30E+02	3,50E+02			1,30E+03				
PU238				3,03E+03		1,05E+04	4,47E+03	1,22E+03	7,16E+03	1,80E+03	4,04E+03	6,60E+03	1,18E+04	9,90E+03		3,50E+03	8,60E+03	1,57E+03	6,80E+02	
PU238*		1,77E+03	3,00E+03																	
PU239											3,60E+03	1,20E+04								
PU239&	1,18E+03												1,03E+04	7,50E+03	1,17E+04	5,40E+03	9,00E+03	5,09E+03	8,50E+03	9,24E+03
AM241												4,60E+02	8,00E+02	7,10E+02		2,20E+02	5,40E+02	9,27E+01	3,80E+01	
CM242			2,87E+04	6,44E+03			1,80E+03				1,62E+03	4,81E+03	2,35E+03	2,61E+04	1,08E+03	7,50E+03	3,03E+03	1,97E+03	2,00E+03	1,62E+04
AM243			2,44E+05	5,11E+04	1,88E+05	3,99E+05	2,04E+05	1,87E+05	1,78E+05	1,61E+05	4,90E+05	3,90E+05								
CM243											7,70E+00	5,80E+00	2,83E+01			8,90E+00	1,40E+01		2,00E+00	
CM244			3,87E+03				2,12E+04				1,75E+02	1,86E+03	1,36E+03	6,52E+03		2,20E+03	3,10E+03		4,40E+02	

\* Pu-238,Am-241  
& Pu-239,Pu-240

## STUK - RADIATION AND NUCLEAR SAFETY AUTHORITY

## DISCHARGE REGISTER OF HELCOM/MORS

19.5.2021

## DISCHARGES FROM NUCLEAR POWER PLANTS AND OTHER NUCLEAR FACILITIES

## STUDSVIK- AQUATIC DISCHARGES

NUCLIDE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
H3	4,55E+13	1,60E+13	3,84E+12	4,00E+13	1,81E+13	2,41E+13	1,51E+12	2,22E+11	3,83E+11	7,34E+10	4,41E+10	4,10E+10	8,52E+10	2,61E+10	3,76E+10	4,90E+10	1,71E+12	6,27E+10	1,18E+10	2,04E+10
CR51	7,24E+09	1,85E+08	7,10E+06	8,00E+07	5,10E+07															
MN54	2,51E+09	6,54E+08	1,89E+08	7,63E+07	7,63E+08	5,52E+07	5,40E+08	1,70E+08	2,20E+07	2,90E+08	2,21E+08	1,20E+06	5,10E+04	1,00E+06	9,41E+07	1,40E+05	1,50E+06	5,10E+07	1,50E+07	
CO57	2,20E+05		1,00E+06	3,36E+06	1,20E+07															
CO58	2,22E+09	4,34E+07	3,01E+07	1,81E+07	6,12E+08	5,90E+06					9,40E+06									
FE59	7,86E+08	1,52E+07			1,56E+08															
CO60	1,81E+10	4,87E+09	2,46E+09	7,09E+09	1,31E+10	2,42E+09	1,49E+09	1,10E+09	3,86E+08	2,04E+09	1,11E+09	2,13E+08	1,31E+08	5,91E+08	6,30E+09	3,45E+09	3,64E+09	4,51E+09	7,22E+08	8,62E+08
ZN65	8,72E+07	3,40E+08	4,60E+07	8,10E+06	4,80E+07	5,60E+05														
SR90	9,13E+09	1,00E+10	1,00E+10	3,60E+09	1,67E+10	2,10E+10	2,39E+10	2,97E+10	2,73E+10	7,72E+09	3,80E+09	5,21E+08	3,10E+08	1,04E+09	4,40E+09	5,92E+08	1,67E+08	4,72E+07	1,03E+08	4,57E+07
ZR95	1,30E+08	1,60E+07				3,60E+07														
NB95	3,00E+08	9,50E+07	2,31E+07	1,23E+07	6,20E+07	8,10E+07	2,40E+06	2,30E+06												
RU103						3,30E+06														
RU106	3,00E+08	5,80E+08	2,80E+08	3,50E+07	3,90E+08	7,30E+08	5,40E+08	3,84E+08	1,60E+08	3,30E+07				2,70E+06						
AG108M											1,60E+06	3,15E+06	6,10E+05	2,17E+06	1,10E+05					
AG110M				6,80E+07	7,00E+06						5,10E+07									
SN113	2,60E+07																			
SB124	6,80E+08	1,90E+08	2,72E+08	1,90E+08	8,60E+07	4,30E+07														
SB125	4,20E+08	7,40E+07	1,80E+08	5,70E+08	9,50E+07	1,60E+08	1,56E+08	7,53E+07	2,50E+07	5,00E+06										
I131		2,30E+10		4,40E+06																
CS134	2,12E+09	6,71E+09	2,02E+10	2,81E+09	2,00E+09	2,91E+08	6,22E+08	3,00E+08	1,85E+08	1,02E+08	9,20E+07	1,40E+08	1,20E+08	3,60E+07	1,62E+07	1,02E+07	1,80E+07	3,90E+04	5,01E+05	4,00E+03
CS137	6,04E+09	1,20E+10	3,00E+10	8,57E+09	7,03E+09	1,33E+09	1,97E+09	9,68E+08	1,23E+09	7,31E+08	7,65E+08	4,84E+08	4,43E+08	2,62E+08	2,82E+08	8,90E+07	2,22E+08	1,63E+08	1,01E+08	1,20E+08
BA140				2,10E+06																
CE144	8,70E+08	1,30E+09	4,90E+08	1,10E+08	1,00E+09	9,80E+08	3,80E+08	8,70E+07	1,50E+07											
EU152	1,72E+09	2,50E+08	1,49E+08	2,30E+07	3,90E+08	3,60E+06	1,40E+06		3,80E+05				1,90E+05				5,40E+05			
EU154	6,27E+08	1,34E+08	7,14E+07	1,84E+07	1,67E+08	4,70E+07	3,40E+07	4,30E+06	1,20E+06										1,40E+04	
EU155	1,20E+08	1,80E+07	1,40E+07		3,20E+07	2,80E+07	1,94E+07	2,20E+06												
IR192	8,32E+09	4,80E+09	7,94E+09	1,00E+09	1,47E+09	2,13E+08	1,70E+05													
U234												2,62E+05	8,20E+04	2,64E+05	3,88E+05	3,08E+05	8,90E+04	3,13E+05	4,70E+05	7,29E+05
U238												6,10E+04	2,00E+04	4,40E+04	1,13E+05	4,80E+04	4,20E+04	3,90E+04	8,00E+04	1,25E+05
PU238			2,15E+07	9,52E+06	6,60E+06	1,10E+07	1,51E+06	9,59E+05	6,10E+05	1,67E+06	1,57E+06	2,42E+05	1,50E+04	9,90E+04	1,77E+05	3,20E+04	2,50E+04	2,63E+04	4,29E+04	6,92E+04
PU239			5,63E+06	1,80E+06	1,32E+06	2,60E+06	2,80E+05	1,50E+05		1,15E+06	1,04E+06	7,70E+04	8,90E+03	3,80E+04	8,30E+04			1,84E+04	4,91E+04	1,56E+04
AM241			8,30E+06	7,76E+06	1,01E+07	8,70E+07	1,62E+07	2,51E+06	2,18E+06	1,89E+06	9,40E+05	6,09E+05	2,11E+05	3,10E+05	2,01E+05	8,50E+04	2,65E+05	6,23E+04	1,02E+05	4,21E+04
CM242			1,53E+07	5,10E+06	2,84E+06	9,50E+06	4,47E+06	1,81E+06	2,80E+05											
CM244			4,54E+07	3,62E+07	3,91E+07	3,00E+07	3,00E+07	1,25E+07	6,10E+06	3,12E+06	1,73E+06	1,04E+06	4,00E+05	1,26E+06	3,38E+05	1,16E+05	3,50E+05	7,50E+04	1,51E+05	1,09E+05

The research reactor at Studsvik was shut down on 16 June 2005

STUK - RADIATION AND NUCLEAR SAFETY AUTHORITY

DISCHARGE REGISTER OF HELCOM/MORS  
19.5.2021

DISCHARGES FROM NUCLEAR POWER PLANTS AND OTHER NUCLEAR FACILITIES

STUDSVIK - AIRBORNE DISCHARGES

NUCLIDE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
H3	1,20E+10	2,70E+09	2,99E+09	6,40E+09	2,60E+12	3,20E+09	3,00E+11	5,40E+09	1,30E+10	5,50E+09	8,60E+09	7,30E+11	8,80E+10	6,50E+10	1,00E+11	1,50E+10	1,40E+11	1,50E+10	2,80E+09	2,72E+09
BE7			2,97E+04																	
C14				7,20E+07																
CR51	1,40E+06																			
MN54																			6,10E+01	4,40E+04
CO58													1,70E+04	3,80E+04						
CO60	9,00E+05		1,11E+05	9,80E+04	2,30E+05	4,90E+04	5,05E+05	9,50E+04	1,66E+05	1,10E+05	3,80E+05	4,20E+05	1,60E+06	5,31E+06	5,00E+06	1,70E+05	1,10E+05	4,43E+04	1,14E+05	3,26E+05
ZN65							9,40E+03				2,10E+04	1,10E+04			1,80E+03	5,00E+02				
KR85							6,50E+11				3,60E+11	1,00E+12	1,10E+11	6,00E+10	3,00E+11	1,90E+11	5,10E+10	2,30E+11	1,50E+12	4,85E+11
SR90	6,85E+03	2,85E+04	5,78E+03	1,68E+04	8,43E+03	6,03E+04	3,38E+03	1,30E+03	2,26E+04	3,75E+03	8,70E+03	3,90E+03	1,80E+04			4,00E+02	3,30E+04	2,50E+04	1,01E+04	5,10E+04
NB95																2,60E+02				
AG108M															1,10E+03					1,84E+05
AG110M							1,30E+03				3,90E+03			4,10E+03			6,40E+03		4,10E+04	7,47E+04
SB125		9,30E+02	4,10E+02	2,00E+04			1,16E+05			5,74E+02		5,20E+02	1,10E+04	1,62E+04	2,68E+03	2,99E+04				3,40E+03
I125	6,95E+08	6,99E+08	1,73E+09	4,40E+09	1,37E+09	3,50E+08	1,50E+06			2,20E+02										
I131	1,23E+07	2,68E+08	1,94E+07	2,20E+07	4,30E+07	1,46E+08	4,51E+07	9,55E+07	3,66E+07	1,08E+07	1,26E+06	1,00E+06	5,90E+06	2,04E+07	1,50E+05	6,70E+05				
BA133															7,30E+02					
CS134	3,50E+05	6,70E+05		2,60E+04		2,50E+04	0,00E+00				1,10E+03				3,30E+03	2,30E+03	1,20E+03	9,40E+03	2,80E+02	3,06E+01
CS137	6,70E+04	2,50E+06	7,59E+04	1,59E+05	7,80E+03	8,40E+04	1,64E+05	1,51E+05	4,70E+04	8,47E+04	3,39E+04	1,58E+05	1,64E+05	9,90E+04	2,96E+05	8,69E+05	3,25E+06	4,05E+05	1,05E+06	6,80E+07
CE144		1,90E+05																		7,20E+01
EU152															7,70E+02			9,70E+01		4,60E+03
EU154															2,80E+03	1,40E+02				1,02E+03
HF181	2,60E+04																			
IR192				1,10E+04	5,99E+04															
PO210	2,15E+05	2,64E+05	6,95E+04	2,92E+04	8,09E+03															
PU238	9,00E+03	1,90E+02	3,90E+02	4,50E+02	4,00E+02															
PU239		8,40E+02	2,80E+02	3,30E+02	2,90E+02															
AM241																	2,20E+03	4,30E+03	1,90E+03	1,07E+04

The research reactor at Studsvik was shut down on 16 June 2005

## STUK - RADIATION AND NUCLEAR SAFETY AUTHORITY

DISCHARGE REGISTER OF HELCOM/MORS  
19.5.2021

## DISCHARGES FROM NUCLEAR POWER PLANTS AND OTHER NUCLEAR FACILITIES

## OSKARSHAMN - AQUATIC DISCHARGES

NUCLIDE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
H3	1,18E+12	1,23E+12	7,41E+11	1,07E+12	9,14E+11	9,53E+11	1,20E+12	1,04E+12	1,51E+12	1,80E+12	8,78E+11	8,39E+11	9,12E+11	8,09E+11	7,58E+11	5,36E+11	5,51E+11	7,49E+11	4,68E+11	3,48E+11
NA22								1,47E+06												
CR51	4,83E+09	1,94E+09	7,56E+08	2,13E+09	3,49E+08	4,74E+08	3,58E+08	3,68E+08	1,01E+08	1,89E+08	1,07E+08	1,87E+08	1,94E+08	3,29E+07	2,46E+07	2,86E+07	1,14E+07		5,00E+06	
MN54	8,53E+08	6,32E+08	6,82E+08	5,53E+08	3,98E+08	2,14E+08	8,12E+07	6,52E+07	5,65E+07	1,62E+08	5,62E+07	1,07E+08	8,08E+07	3,16E+07	3,12E+07	3,50E+07	5,99E+07	3,42E+07	3,80E+07	4,89E+07
FE55												1,57E+08	2,77E+08	1,52E+08	1,36E+08	1,22E+08	9,85E+07	9,82E+07	1,73E+08	4,33E+07
CO57	5,70E+07	7,00E+05	7,78E+05	2,93E+06	1,21E+06	2,91E+05		1,66E+05	7,58E+04	1,04E+05	3,91E+04	5,93E+05	7,53E+05	2,64E+05						
CO58	9,71E+08	7,40E+08	5,72E+08	1,27E+09	5,61E+08	3,19E+08	1,80E+08	2,21E+08	1,04E+08	2,06E+08	8,43E+07	1,01E+08	1,17E+08	4,57E+07	4,25E+07	3,96E+07	3,42E+07	1,12E+07	1,82E+07	1,57E+07
FE59	1,39E+07	7,30E+07	2,49E+07	1,53E+07	1,47E+07		2,62E+06	7,35E+06	8,10E+05	1,71E+06	1,64E+06	6,71E+05	5,73E+06							5,75E+07
CO60	9,94E+09	8,03E+09	9,20E+09	7,84E+09	4,11E+09	2,19E+09	1,10E+09	1,00E+09	7,41E+08	1,36E+09	5,84E+08	5,03E+08	9,00E+08	3,56E+08	4,27E+08	3,54E+08	2,39E+08	1,89E+08	2,31E+08	2,38E+08
NI63												3,45E+07	6,01E+07	2,76E+07	8,07E+07	6,79E+07	8,69E+07	2,81E+07	3,19E+08	1,96E+07
ZN65	8,64E+08	6,24E+08	4,79E+08	2,50E+08	1,28E+08	7,95E+07	4,10E+07	3,71E+07	1,34E+07	1,99E+07	1,72E+07		1,35E+07	2,75E+07	1,34E+06	1,26E+07	8,06E+05			
SR89												1,24E+06		3,47E+06	2,39E+06	5,91E+05	1,68E+07	2,05E+06	1,95E+05	2,25E+06
SR90	7,45E+06	3,78E+06	2,53E+06	1,61E+06	5,78E+05	1,41E+05	3,49E+06	1,41E+06	2,10E+07							2,11E+04	6,61E+05	1,34E+05	1,25E+06	2,40E+05
ZR95	1,70E+07	6,50E+06	1,41E+07	2,10E+06	8,51E+06					1,47E+06			1,94E+06							
NB95	2,70E+06	1,60E+06	1,20E+07	2,38E+07	2,29E+07	3,90E+06	1,21E+06	9,36E+05	3,13E+06	3,26E+06	4,40E+05	1,76E+06	2,84E+06							
RU103	2,10E+08			6,15E+05	5,30E+05															
RU106				5,55E+06	4,36E+06															
AG108M				7,68E+06	2,50E+07		2,21E+07		4,14E+04	1,43E+06	6,68E+07	5,01E+05	4,57E+04	1,61E+05	1,13E+06	3,54E+06	4,77E+05	7,33E+05	1,54E+05	5,38E+04
AG110M	8,83E+08	9,62E+08	9,85E+08	8,77E+08	4,37E+08	3,56E+08	1,62E+08	1,62E+08	7,35E+07	6,08E+07	3,71E+07	2,59E+07	2,38E+07	4,27E+07	3,46E+07	7,03E+06	1,29E+08	5,89E+07	9,75E+07	3,44E+07
SN113			1,53E+06		9,71E+05															
SN117M				1,56E+06																
SB124	2,14E+08	5,18E+07	7,49E+07	2,28E+08	1,35E+08	6,46E+07	2,64E+07	1,08E+07	2,12E+07	2,66E+07	9,49E+06	1,08E+07	2,06E+07	1,22E+07	2,01E+07	8,56E+06	1,78E+07	1,30E+06	6,21E+06	2,02E+06
SB125	3,46E+08	2,05E+08	3,86E+08	7,30E+08	2,97E+08	2,40E+08	1,35E+08	2,42E+08	6,54E+07	1,99E+08	5,82E+07	1,13E+07	1,10E+08	6,42E+07	5,49E+07	9,07E+07	3,71E+07	3,02E+07	1,47E+08	5,63E+07
I131	4,10E+08	1,50E+08	2,89E+08	3,50E+07	9,06E+06	7,02E+06							2,70E+05	3,43E+05						1,10E+06
CS134	5,22E+08	2,32E+08	1,28E+08	8,25E+07	7,75E+06	6,72E+07	1,26E+08	1,68E+07	3,10E+07	3,33E+07	8,93E+06	1,33E+07	1,51E+07		2,74E+07	9,55E+06	5,14E+06	6,83E+05	1,40E+05	7,14E+06
CS136	6,80E+06			6,26E+05																
CS137	6,75E+08	6,30E+08	6,04E+08	2,88E+08	8,38E+07	1,66E+08	2,35E+08	6,19E+07	1,22E+08	1,40E+08	6,81E+07	5,54E+07	8,46E+07	2,38E+07	5,24E+07	3,73E+07	2,86E+07	7,58E+06	2,55E+07	2,15E+07
BA140			8,83E+07																	
CE141	2,20E+07	7,70E+06	2,50E+07	2,48E+06	8,02E+06	5,22E+05	1,51E+06	1,70E+05	7,69E+05	7,67E+05	6,52E+04	5,34E+05	1,37E+06	1,59E+06						
CE144	1,00E+07	6,40E+06	2,90E+06	9,36E+05		6,63E+05														
PU238												1,59E+04		7,56E+02	2,03E+03	5,28E+03	2,46E+03	3,58E+03	5,56E+03	1,60E+03
PU238*	6,38E+05	9,85E+05	1,46E+06	9,28E+05	3,69E+05	2,07E+05	1,67E+05	2,80E+05	2,22E+05	4,60E+05	1,87E+05			2,12E+03	8,46E+03					
PU239&	4,67E+04	1,67E+05	2,29E+05	1,12E+05	3,91E+05	1,17E+05	1,02E+04		2,65E+04	2,00E+04	4,15E+03		5,92E+03	1,13E+04	2,12E+04	1,21E+04	9,75E+03	5,33E+03	9,13E+03	2,63E+02
AM241												7,40E+02		1,09E+04	3,16E+04	2,48E+04	2,45E+04	1,74E+04	4,30E+04	3,55E+04
CM242	1,33E+06	7,91E+05	1,24E+06	8,36E+05	3,23E+05	1,65E+05	2,51E+05	3,22E+05	2,06E+05	1,54E+05	9,81E+04	1,54E+05	9,50E+04	5,72E+03	4,53E+04	4,20E+02	1,72E+03	2,58E+03	4,89E+03	2,08E+03
AM243		2,57E+04	4,98E+04	3,62E+04	8,81E+04	7,64E+04	5,27E+04	5,39E+04	1,08E+05	8,06E+04	2,79E+04	5,18E+04	2,72E+04	2,29E+03	1,56E+04					
CM243^	1,21E+05	1,25E+05	1,42E+05	1,94E+05	1,88E+05	1,46E+05	1,18E+05	4,49E+04	3,50E+04	7,94E+04	9,23E+04			4,68E+02	4,34E+03	1,05E+03	1,97E+03	1,17E+03	9,90E+02	3,46E+02
CM244												2,14E+04	1,30E+04		7,01E+03	1,56E+03	1,24E+03	1,59E+03	6,81E+03	4,28E+03

\* Pu-238,Am-241  
& Pu-239,Pu-240  
^ Cm-243,Cm-244



STUK - RADIATION AND NUCLEAR SAFETY AUTHORITY

DISCHARGE REGISTER OF HELCOM/MORS  
19.5.2021

DISCHARGES FROM NUCLEAR POWER PLANTS AND OTHER NUCLEAR FACILITIES

OSKARSHAMN - AIRBORNE DISCHARGES

NUCLIDE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
H3			4,33E+11	9,74E+11	1,21E+12	5,37E+11	1,19E+12	8,43E+11	9,02E+11	5,91E+11	5,57E+11	7,32E+11	5,44E+11	5,15E+11	4,46E+11	3,75E+11	3,89E+11	2,80E+11	2,67E+11	3,71E+11
C14			9,12E+11	6,80E+11	8,24E+11	6,69E+11	5,80E+11	6,28E+11	7,71E+11	5,02E+11	6,54E+11	7,35E+11	5,03E+11	4,98E+11	8,75E+11	8,58E+11	9,05E+11	7,36E+11	6,62E+11	6,86E+11
CR51	1,70E+08	2,25E+08	4,51E+07	1,14E+08	5,94E+07	1,31E+08	4,99E+07	3,35E+07	2,53E+07	4,76E+07	3,61E+07	2,61E+07	1,48E+07	1,93E+07	3,46E+07	1,12E+07	5,83E+06	3,06E+06	2,90E+06	4,13E+06
MN54	1,45E+06	2,04E+06	6,05E+06	8,11E+06	5,86E+06	1,73E+07	1,55E+07	3,75E+06	4,07E+06	1,52E+07	7,70E+06	1,25E+07	4,81E+06	4,51E+06	3,82E+06	3,19E+06	4,10E+06	2,13E+06	1,88E+06	2,53E+06
CO57						2,79E+03	2,08E+04	2,61E+04		4,33E+04				6,54E+04						
CO58	1,35E+07	1,82E+07	9,60E+06	2,78E+07	3,10E+07	7,41E+07	2,47E+07	2,13E+07	3,88E+07	4,91E+07	3,17E+07	7,24E+07	3,52E+07	7,96E+06	1,01E+07	6,11E+06	7,22E+06	2,42E+06	2,24E+06	2,51E+06
FE59				5,29E+05	2,66E+04		4,71E+04	4,88E+05	9,26E+05		3,06E+06	1,53E+06	5,57E+05	1,04E+06		6,37E+05	1,07E+06	5,88E+05	4,41E+05	1,16E+06
CO60	7,32E+07	1,60E+08	1,58E+08	9,06E+07	8,65E+07	9,10E+07	6,60E+07	5,84E+07	4,60E+07	1,04E+08	8,12E+07	1,04E+08	4,86E+07	4,64E+07	4,36E+07	2,29E+07	3,36E+07	2,14E+07	2,17E+07	2,25E+07
ZN65	1,30E+07	6,30E+06	3,94E+06	2,27E+06	5,44E+06	1,28E+07	3,97E+06	2,21E+06	3,70E+06	3,86E+06	3,30E+06	3,77E+06	1,39E+06	1,71E+05	2,48E+05	2,70E+05	9,28E+05	8,41E+05		
KR85		1,20E+11					1,00E+10				1,70E+12			8,00E+10	1,76E+12	1,60E+11	8,00E+10	3,36E+11	4,66E+08	8,03E+10
SR89																			4,43E+05	
SR90	1,58E+05	6,40E+05	1,83E+05	2,72E+05	3,43E+05	4,96E+05	1,20E+06	1,52E+05	2,20E+05	1,28E+05	3,82E+04							6,29E+04	4,83E+04	
ZR95		2,50E+05			1,09E+06	2,10E+05	5,95E+05	6,55E+05	4,98E+05		6,08E+05	4,20E+05	5,10E+05	3,09E+05	1,70E+05	3,34E+05	5,05E+05	5,62E+05	4,26E+05	5,50E+05
NB95	8,70E+04	6,82E+05		9,22E+05	1,69E+06	9,15E+05	1,12E+06	1,22E+06	1,34E+06	3,45E+05	1,72E+06	8,77E+05	7,45E+05	4,41E+05	3,46E+05	2,41E+05	5,51E+05	1,03E+06	4,64E+05	7,74E+05
RU103						6,07E+04	2,93E+04	2,99E+03												
AG108M															9,52E+04					
AG110M	6,14E+06	3,17E+06	1,40E+06	3,87E+06	2,80E+07	4,21E+07	1,13E+07	1,99E+07	1,39E+07	8,86E+06	6,04E+06	9,39E+06	9,45E+06	4,48E+07	1,58E+07	4,83E+07	3,28E+07	3,09E+07	1,56E+07	7,03E+06
SN113					3,82E+04		9,92E+03													
SN117M				9,81E+03																
SB124	1,24E+06		1,06E+05	7,37E+05	5,68E+05	1,21E+06	2,25E+05	2,70E+05	1,09E+05	5,74E+04	9,69E+05	8,20E+05	5,88E+05	4,63E+05	5,96E+05	3,34E+05	4,28E+05	1,63E+05	2,87E+05	3,29E+05
SB125										4,58E+05	1,24E+05	2,99E+05	1,60E+05	7,76E+04		7,33E+04			9,38E+04	
I131	2,31E+09	1,29E+09	3,37E+08	2,11E+08	8,13E+07	6,78E+08	1,54E+08	6,39E+08	1,92E+08	2,30E+07	4,70E+07	4,98E+07	4,57E+07	8,92E+06	9,44E+07	3,96E+08	8,96E+06	2,98E+08	1,14E+06	3,99E+08
XE131M	9,88E+11	6,50E+09			1,42E+10		1,19E+10													
CS134				3,62E+04	5,98E+04	8,06E+05	1,70E+04													
CS136						1,38E+05														
CS137	4,40E+04	7,20E+04	8,94E+04	1,50E+05	2,05E+06	1,06E+06	7,89E+05	1,49E+06	5,33E+05	9,05E+05	1,85E+05	1,74E+05	3,98E+04	4,29E+05	3,33E+05		1,39E+05	3,15E+04	1,61E+05	
BA140		2,40E+06	2,28E+07	1,76E+07		8,89E+05	5,27E+05	1,32E+06				7,19E+05		4,34E+05		2,86E+05				
CE141		6,30E+04	9,49E+04		2,91E+04	1,48E+05	3,93E+04	4,29E+04		3,45E+04			4,49E+04	5,66E+04						
PU238													9,20E+02	4,26E+03	8,00E+03	5,79E+04	2,53E+04	2,80E+04	2,76E+04	3,15E+04
PU238*	7,48E+04	2,62E+05	3,90E+04	1,88E+05	2,28E+05	7,96E+04	6,32E+04	1,66E+05	1,19E+05	8,79E+04	3,53E+04		1,68E+03	1,53E+04	1,10E+04					
PU239&		2,54E+04	1,30E+04	3,32E+04	1,02E+05	2,17E+03	4,22E+03	1,75E+04	1,19E+04	3,43E+03				3,42E+03	4,88E+03	1,87E+04	9,72E+03	1,08E+04	1,54E+04	4,16E+04
AM241													4,80E+01	4,67E+03	6,18E+03	7,84E+04	1,03E+05	4,25E+04	1,72E+04	3,07E+05
CM242	5,99E+03	9,20E+02	5,63E+03	4,84E+03		4,71E+03	1,66E+03	8,78E+03	5,01E+03	8,10E+02		6,37E+03		1,57E+04	1,59E+04	3,03E+03	6,62E+03	2,01E+04	4,47E+04	6,23E+04
AM243	3,20E+03	7,20E+03	8,16E+03	4,22E+04	2,83E+04	5,43E+04	1,51E+04	2,55E+04	1,82E+04	1,81E+04	1,06E+04	8,99E+03	1,41E+04	5,19E+03	1,02E+04		0,00E+00			
CM243^		2,73E+04	4,29E+03	7,92E+04	4,61E+04	2,71E+04	7,52E+03	2,16E+04	1,59E+04	1,44E+03	2,58E+03			1,90E+03	6,08E+03	2,35E+04	1,80E+03	5,66E+03	3,82E+03	
CM244													9,40E+01					2,31E+02	2,26E+02	

\* Pu-238,Am-241  
& Pu-239,Pu-240  
^ Cm-243,Cm-244



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DISCHARGES FROM NUCLEAR POWER PLANTS AND OTHER NUCLEAR FACILITIES

BARSEBÄCK - AQUATIC DISCHARGES

NUCLIDE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
H3	4,00E+11	3,19E+11	3,02E+11	2,45E+11	3,22E+11	3,51E+11	4,24E+10	3,02E+10	7,39E+09	7,26E+09	4,99E+09	2,71E+09	2,74E+09	9,58E+08	4,43E+08	1,66E+09	3,15E+08	1,15E+09	3,11E+09	5,63E+09
CR51	4,50E+08	2,20E+09	1,37E+10	4,86E+09	1,16E+09	1,04E+08														
MN54	1,50E+09	2,77E+09	1,07E+09	1,23E+09	5,32E+08	2,71E+08	7,24E+07	3,92E+07	1,20E+07	7,44E+06	1,32E+06	1,09E+06								
CO58	1,90E+09	3,09E+09	4,79E+09	3,79E+09	1,45E+09	2,97E+08	1,30E+07													
FE59		1,04E+08	3,37E+08	2,39E+08	2,73E+07	3,22E+06														
CO60	1,80E+10	3,07E+10	1,76E+10	9,50E+09	4,96E+09	1,93E+09	7,44E+08	2,74E+09	1,03E+09	7,06E+08	1,90E+08	4,49E+08	9,07E+07	8,67E+07	1,27E+08	3,71E+07	2,20E+07	1,70E+07	1,18E+08	5,25E+07
ZN65	2,50E+08	4,09E+08	5,95E+08	4,00E+08	1,48E+08	1,36E+08	2,70E+07	1,29E+07	3,14E+06	1,35E+06		1,94E+05								
SR90	8,57E+05	1,59E+06	1,34E+06	5,43E+06	1,05E+06	1,42E+06	6,37E+05	3,54E+05	2,64E+05	2,43E+05	1,59E+05	1,76E+05	2,16E+05		5,33E+03		9,27E+03			1,65E+05
ZR95	2,20E+07	2,25E+08	1,12E+08	1,04E+08	4,87E+07	7,94E+05														
NB95	5,60E+07	2,14E+08	2,09E+08	1,46E+09	9,43E+07	4,47E+06														
AG110M	1,10E+08	1,68E+08	4,46E+08	1,71E+07	9,65E+06	4,40E+06		3,11E+07												
SN113		8,31E+06				6,40E+05														
SB124	2,00E+08	9,28E+07	1,24E+08	1,51E+08	2,00E+07	1,38E+07	1,03E+06			6,72E+05										
SB125	7,40E+08	5,62E+08	2,03E+07	4,98E+08	9,42E+07	1,81E+08	5,23E+07	9,23E+07	5,71E+07	2,95E+07	1,01E+07	2,11E+07	3,00E+07	8,31E+06	3,71E+06	1,15E+07	9,52E+05	4,44E+06	1,47E+06	
I131				7,56E+06	1,81E+09															
CS134	1,40E+08	1,12E+09	2,03E+08	1,73E+07	8,10E+06	7,08E+06	1,45E+06	8,02E+05	2,44E+05	1,26E+06	2,38E+05	3,33E+05	3,50E+05	8,09E+04						
CS137	1,20E+09	6,97E+09	1,22E+09	3,26E+08	9,98E+07	5,41E+07	2,23E+07	2,66E+07	4,00E+07	6,68E+07	2,36E+07	1,07E+08	1,06E+08	6,32E+07	7,46E+07	3,24E+07	3,28E+07	3,63E+07	4,40E+07	3,93E+07
PU238	9,47E+03		6,91E+03	2,76E+03		1,13E+03	1,81E+05	1,16E+06	4,02E+05	6,54E+05	1,88E+05	2,23E+05	5,63E+05	1,01E+05	2,51E+04	1,56E+05	4,11E+04	3,03E+04	7,85E+04	1,77E+05
PU239	1,53E+04	5,08E+03	2,84E+04	1,10E+04		3,16E+03	2,52E+03	7,85E+03	3,96E+03	4,81E+03	5,49E+02	1,49E+03	1,46E+03	4,44E+02	1,29E+02	6,48E+02	1,89E+02	1,51E+02	2,81E+02	3,00E+03
AM241	5,98E+03	2,96E+04	1,62E+04	3,24E+03			1,39E+04	9,57E+04	3,07E+04	4,40E+04	2,76E+04	2,68E+04	3,03E+04	7,46E+03	2,56E+03	2,00E+04	3,33E+03	5,03E+03	1,13E+04	5,87E+04
CM242	4,48E+03			2,08E+03			1,58E+04	6,84E+03	2,07E+04	1,22E+04	2,27E+04	1,13E+04	3,64E+03	7,94E+02	5,10E+01	7,61E+03	3,89E+02	7,88E+02	1,61E+03	7,54E+03
CM244	5,38E+03	9,52E+03	4,56E+03	2,01E+03			1,19E+03	5,99E+04	2,11E+03	3,82E+04	9,38E+03	1,18E+04	3,45E+04	6,66E+03	2,17E+03	1,18E+04	2,19E+03	3,36E+03	8,00E+03	4,86E+04

Unit I of the power plant was shut down on 30 November 1999

Unit II of the power plant was shut down on 31 May 2005

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DISCHARGES FROM NUCLEAR POWER PLANTS AND OTHER NUCLEAR FACILITIES

BARSEBÄCK - AIRBORNE DISCHARGES

NUCLIDE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
H3			2,85E+11	5,87E+10	1,04E+11	8,83E+10	3,20E+10													
C14			4,40E+11	1,59E+11	4,10E+11	1,84E+11														
CR51	1,10E+07	5,30E+07	6,98E+07	4,98E+07	3,74E+07	2,48E+06														
MN54	1,38E+07	1,19E+07	7,52E+06	9,64E+06	4,84E+06		3,92E+05	1,04E+05												
CO58	1,29E+07	1,61E+07	4,32E+07	2,22E+07	6,20E+06	8,48E+05	1,41E+05													
FE59	1,61E+06	5,73E+06	3,17E+06	8,06E+05	2,24E+05															
CO60	5,70E+07	7,75E+07	1,02E+08	9,77E+07	6,24E+07	2,21E+07	2,20E+07	1,07E+07	9,18E+06	7,33E+06	3,85E+06	1,48E+07	9,34E+06	2,08E+07	7,23E+05	4,40E+06	3,81E+06	8,76E+06	9,07E+06	3,78E+06
ZN65	1,39E+06	1,95E+06	2,66E+06	4,36E+06	6,85E+05	3,09E+05														
KR85	1,10E+09	3,75E+07	2,15E+07	7,75E+06	1,07E+09	4,75E+06														
SR90		8,04E+04		1,05E+05		2,46E+04							2,90E+04					5,55E+04		
ZR95	9,86E+06	1,11E+06	1,29E+06	5,79E+05			8,49E+04													
NB95	1,29E+07	2,99E+07	4,49E+06	2,60E+06	1,26E+06															
SN113		1,91E+05	1,66E+05			7,38E+04														
SB124	1,69E+06	7,05E+05	2,30E+06	9,56E+05			1,14E+05													
I129	4,00E-03	2,80E-04	2,48E-04	3,09E-04	2,48E-02															
I131	7,90E+06	5,59E+05	4,96E+05	6,18E+05	4,94E+07															
XE131M						3,82E+12														
CS134	9,90E+04					1,20E+05														
CS137	3,14E+05	3,00E+05	9,87E+04	7,92E+04	2,14E+05	9,30E+04							3,33E+04	6,72E+03			1,81E+04	1,09E+04		
PU238								2,83E+03	1,48E+03	8,61E+03		5,80E+03	1,03E+03					2,10E+03	7,64E+02	4,11E+02
PU239									8,91E+02									6,40E+02	5,00E+02	
AM241									1,88E+04			1,16E+03	3,99E+03			9,05E+02	1,69E+02	1,97E+03	1,40E+03	1,55E+03
CM242									1,73E+04									9,56E+02	3,05E+03	6,57E+02
CM244									3,51E+03				3,01E+03			9,52E+02	8,94E+01			5,18E+02

Unit I of the power plant was shut down on 30 November 1999

Unit II of the power plant was shut down on 31 May 2005

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RINGHALS - AQUATIC DISCHARGES

NUCLIDE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
H3	2,64E+13	2,49E+13	2,44E+13	3,87E+13	4,07E+13	3,27E+13	4,52E+13	3,31E+13	3,08E+13	4,54E+13	4,06E+13	3,75E+13	2,35E+13	4,11E+13	3,74E+13	3,44E+13	3,34E+13	4,82E+13	3,75E+13	3,42E+13
BE7					1,80E+06															
NA22				4,51E+03				3,30E+04			1,30E+05									
CR51	2,02E+09	2,98E+09	1,54E+09	1,63E+09	5,91E+09	1,72E+09	5,37E+08	4,93E+08	3,24E+08	1,89E+08	8,20E+08	1,09E+08	9,56E+07	6,63E+07	1,32E+08	6,40E+07	4,11E+07	2,82E+07	2,39E+07	1,65E+07
MN54	1,07E+09	1,20E+09	6,50E+08	5,14E+08	1,48E+09	1,20E+09	3,00E+08	2,66E+08	1,75E+08	1,70E+08	2,12E+08	6,65E+07	1,37E+08	6,34E+07	7,56E+07	4,93E+07	3,82E+07	1,98E+07	2,55E+07	1,62E+07
CO57	8,06E+07	1,00E+08	3,77E+07	3,74E+07	2,26E+07	1,90E+07	1,23E+07	3,43E+06	4,30E+06	3,00E+06	2,39E+06	3,49E+06	2,54E+06	1,19E+06	1,06E+06	9,50E+05	7,40E+05	5,60E+04		1,86E+05
CO58	1,30E+10	2,98E+10	1,24E+10	1,09E+10	6,15E+09	5,24E+09	4,64E+09	1,33E+09	1,51E+09	1,20E+09	1,18E+09	8,22E+08	4,41E+08	3,86E+08	3,27E+08	4,73E+08	2,30E+08	1,11E+08	1,55E+08	2,03E+08
FE59	2,25E+08	1,42E+08	9,02E+07	7,17E+07	8,82E+07	6,36E+07	2,35E+07	2,20E+07	2,26E+07	4,50E+06	3,59E+06	1,03E+07	1,26E+07	1,90E+06	2,97E+06	1,87E+06	3,77E+06	1,22E+06	4,50E+05	9,29E+05
CO60	1,17E+10	1,96E+10	5,20E+09	3,21E+09	3,91E+09	3,28E+09	1,31E+09	1,69E+09	8,22E+08	8,21E+08	1,11E+09	3,70E+08	4,49E+08	2,36E+08	2,13E+08	1,94E+08	1,39E+08	4,87E+07	6,75E+07	5,87E+07
NI63												9,40E+08	5,32E+07	1,60E+08	1,34E+08	3,51E+08	1,23E+09	1,80E+08	3,66E+08	1,83E+08
ZN65	3,93E+07	4,91E+07	2,00E+07	2,36E+07	1,71E+07	2,36E+07	6,59E+06	1,73E+06	1,27E+06	2,20E+06	1,00E+05	2,80E+06	1,90E+06		3,10E+06	4,60E+06	2,60E+06		5,20E+05	
SR89	1,16E+07	4,23E+06	1,78E+07	3,34E+06	7,23E+06	9,55E+06	5,80E+05		1,06E+05	8,23E+06		1,21E+07	5,50E+04		1,36E+07	1,27E+07		7,42E+04	3,70E+05	1,07E+05
SR90	1,58E+07	5,25E+06	1,15E+07	8,38E+06	4,38E+06	9,14E+06	9,03E+06	2,67E+06	3,02E+06	5,99E+06	2,25E+07	9,50E+06	2,61E+06	6,70E+06	8,64E+06	2,02E+06	2,99E+06	1,99E+06	1,06E+06	1,05E+06
ZR95	3,14E+08	4,29E+08	1,15E+08	1,98E+08	1,55E+08	2,26E+08	1,13E+08	5,44E+07	7,46E+07	3,58E+07	2,96E+07	1,73E+07	6,14E+06	3,61E+06	5,90E+06	9,30E+06	7,85E+06	3,08E+06	5,99E+06	1,78E+06
NB95	7,10E+08	8,22E+08	2,56E+08	3,87E+08	2,99E+08	4,15E+08	2,12E+08	9,49E+07	1,21E+08	6,99E+07	5,30E+07	3,58E+07	1,75E+07	9,09E+06	1,03E+07	1,58E+07	1,25E+07	5,49E+06	7,60E+06	3,41E+06
RU106	3,16E+07		1,14E+06																3,92E+05	
AG108M					1,97E+06	1,94E+06	1,80E+05	5,50E+05	2,30E+04	2,70E+05	5,80E+03	1,40E+05	4,10E+04	4,40E+04						
AG110M	1,25E+09	1,32E+09	1,11E+09	6,48E+08	1,17E+09	3,57E+08	2,70E+08	1,59E+08	2,00E+08	1,69E+08	9,87E+07	6,42E+07	9,58E+07	8,89E+07	6,62E+07	8,21E+07	1,62E+08	4,03E+07	5,30E+07	1,63E+07
SN113	3,08E+07	2,79E+07	8,98E+06	1,07E+07	6,35E+06	7,07E+06	3,20E+06	9,33E+05	2,25E+06	2,60E+05	1,40E+05	2,20E+05		1,30E+05	7,90E+04	2,40E+05				
SN117M															8,37E+05					
TE123M												2,82E+07	4,38E+07	2,88E+07	3,02E+07	6,85E+07	8,76E+07	4,64E+07	3,85E+07	3,04E+07
SB124	3,38E+09	9,63E+09	2,33E+09	3,14E+09	1,64E+09	3,26E+08	1,68E+08	6,60E+08	8,90E+07	5,24E+07	3,51E+08	7,21E+07	5,75E+07	2,31E+07	2,81E+07	4,62E+07	1,49E+07	3,49E+07	4,74E+07	2,10E+07
SB125	1,54E+09	1,25E+09	9,10E+08	9,61E+08	6,24E+08	2,91E+08	7,66E+07	3,85E+08	3,04E+07	6,76E+07	1,24E+08	1,67E+07	2,57E+07	1,88E+07	1,42E+07	3,66E+07	6,50E+06	1,84E+07	3,87E+07	3,80E+07
I131	9,38E+06	6,21E+07	6,04E+07	2,21E+07	1,49E+07	1,16E+08		1,50E+06				5,10E+05	1,20E+05	9,70E+05	2,40E+05	1,20E+06				
CS134	3,21E+07	3,40E+07	6,30E+07	7,60E+07	4,11E+07	8,09E+07	3,10E+06	1,37E+06							7,70E+06	1,50E+06	8,19E+05			
CS136		2,66E+06																		
CS137	4,50E+08	5,95E+08	6,90E+08	6,98E+08	6,99E+08	3,73E+08	1,32E+08	3,24E+08	2,49E+08	2,27E+08	2,99E+08	3,52E+07	6,18E+07	2,92E+07	3,58E+07	9,22E+07	6,76E+07	1,17E+07	4,11E+06	
BA140		3,27E+06	3,33E+06																	
CE141	4,03E+04			3,40E+05																
CE144	3,06E+06	9,68E+06	1,34E+05		1,40E+06		4,30E+05		1,20E+06											
PU238	7,28E+05		8,32E+05	3,46E+05	5,98E+05	6,62E+05	4,55E+05	2,81E+05	1,23E+06	7,44E+05	1,41E+06	1,07E+06	1,18E+06	2,97E+05	8,08E+05	8,10E+05	4,15E+05	4,05E+05	3,72E+05	1,71E+04
PU238*		2,40E+05																		
PU239				1,84E+04	7,64E+05	1,42E+05	8,47E+04	1,82E+04												
PU239&	2,73E+05	1,67E+05	1,51E+05	4,29E+04					3,62E+05	1,97E+05	1,62E+05	1,90E+05	2,58E+05	8,44E+04	4,74E+04	1,11E+05	8,40E+04	6,76E+04	6,90E+04	1,35E+04
AM241	1,52E+06	2,74E+06	2,59E+05	3,25E+05	5,91E+06	3,06E+05	1,57E+05	2,95E+05	1,43E+07	9,13E+05	4,12E+06	1,93E+06	2,16E+06	3,12E+05	5,53E+05	8,60E+05	1,76E+05	1,79E+05	1,18E+05	6,82E+04
CM242	2,57E+05	1,35E+05	2,05E+04	2,86E+04	2,74E+05	1,38E+05	1,13E+04	2,43E+04	1,35E+04	2,77E+04	7,00E+03	2,43E+04	4,67E+04	1,70E+03	4,02E+04	1,32E+05	5,80E+03	1,82E+02	1,53E+04	1,92E+03
CM244	1,93E+06	6,88E+05	2,12E+05	2,61E+05	3,84E+05	1,92E+05	6,77E+04	1,00E+05	8,17E+04	1,39E+05	1,54E+05	2,39E+05	1,94E+05	3,17E+04	2,15E+04	1,63E+05	3,74E+04	7,93E+03	1,77E+04	1,30E+04

\* Pu-238,Am-241  
& Pu-239,Pu-240



STUK - RADIATION AND NUCLEAR SAFETY AUTHORITY

DISCHARGE REGISTER OF HELCOM/MORS  
19.5.2021

DISCHARGES FROM NUCLEAR POWER PLANTS AND OTHER NUCLEAR FACILITIES

RINGHALS - AIRBORNE DISCHARGES

NUCLIDE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
H3			9,80E+11	1,40E+12	1,24E+12	1,72E+12	2,24E+12	1,90E+12	2,25E+12	1,82E+12	1,93E+12	2,01E+12	1,94E+12	2,89E+12	2,30E+12	2,28E+12	2,34E+12	1,49E+12	1,45E+12	1,16E+12
BE7	7,40E+05		1,06E+06	1,38E+06	4,70E+07	7,50E+05	8,20E+05						9,60E+04		3,41E+06					1,79E+06
C14			1,23E+12	9,39E+11	1,21E+12	1,39E+12	1,23E+12	1,16E+12	8,56E+11	6,85E+11	8,39E+11	9,43E+11	7,62E+11	1,60E+12	9,89E+11	9,72E+11	9,53E+11	7,93E+11	1,13E+12	1,04E+12
NA22								5,10E+04												
CR51	4,82E+05	1,30E+07	3,04E+07	5,94E+07	4,92E+07	3,20E+07	7,50E+06	1,50E+07	7,70E+06	3,50E+06	1,50E+06	1,70E+07	8,80E+06	1,00E+07	9,51E+06	7,80E+06	6,50E+06	9,50E+06	1,40E+07	1,02E+07
MN54	8,37E+05	3,09E+06	6,34E+06	1,89E+07	6,30E+06	1,70E+07	2,30E+06	3,80E+06	3,80E+06	2,40E+06	1,30E+06	3,50E+06	6,50E+06	1,50E+07	7,51E+06	5,20E+06	2,80E+06	6,30E+06	3,30E+06	1,56E+06
CO57													1,30E+04							
CO58	5,81E+06	4,66E+06	1,56E+07	1,66E+07	2,63E+07	1,40E+07	2,58E+06	3,70E+06	6,70E+06	1,91E+07	2,04E+06	8,17E+06	6,82E+06	1,00E+07	5,79E+06	4,64E+06	1,80E+06	3,90E+06	2,90E+06	1,13E+06
FE59		7,61E+05	2,96E+06	3,63E+06	3,40E+06	1,40E+06	1,20E+06	1,60E+06	1,10E+06	2,40E+05		3,00E+06	2,10E+06	1,70E+06	1,24E+06	1,90E+06	1,30E+06	1,80E+06	1,40E+06	9,66E+05
CO60	9,25E+06	2,36E+07	5,68E+07	8,56E+07	4,42E+07	4,51E+07	1,40E+07	2,10E+07	2,40E+07	1,90E+07	1,50E+07	1,42E+07	1,60E+07	1,80E+07	2,48E+07	1,50E+07	7,90E+06	1,70E+07	1,10E+07	5,70E+06
ZN65				6,55E+05		1,70E+05			3,00E+05			2,80E+05			4,05E+05	7,60E+05	6,90E+05	7,90E+05	6,30E+05	4,08E+05
KR85	9,90E+10	1,70E+11	1,17E+08	2,70E+11	7,70E+10	2,20E+11										1,00E+11				
SR89	8,37E+06	2,89E+06	4,09E+06	3,63E+06	4,30E+05	5,49E+05	8,62E+05	3,23E+05	8,60E+03	4,46E+05	2,10E+04		4,30E+04		8,26E+05	1,91E+05		1,90E+05		
SR90	3,56E+04	1,00E+05	1,53E+06	7,59E+04	2,30E+04	9,70E+04	6,76E+05		5,03E+05	5,40E+04	3,70E+04	5,40E+04	1,40E+01		4,79E+06	4,00E+01	3,45E+05	3,41E+05		
ZR95	9,54E+05	6,13E+05	4,29E+06	3,36E+06	7,50E+06	7,50E+05	6,70E+05	1,20E+06	3,70E+05	3,40E+05	1,00E+05	8,00E+05	6,80E+05	4,70E+05	3,21E+05	5,90E+05	3,90E+05	5,20E+04	6,30E+05	5,01E+05
NB95	1,43E+06	1,85E+06	6,72E+06	6,19E+06	1,60E+07	1,50E+06	1,10E+06	2,30E+06	7,20E+05	6,90E+05	4,63E+05	1,20E+06	1,82E+06	8,60E+05	7,92E+05	7,50E+05	5,80E+05	9,94E+03	8,10E+05	9,30E+05
AG110M				4,93E+04	1,10E+05													6,20E+05		
SN113	5,94E+04		1,61E+05	1,01E+05	2,80E+05						3,40E+03									
SB124	5,97E+04	2,29E+05	7,46E+05	1,78E+06	7,30E+05	4,70E+05	2,50E+05	5,70E+05	5,80E+05	1,70E+05	1,78E+05	1,10E+06	1,60E+06	6,80E+05	3,40E+06	5,30E+05		1,40E+05	3,60E+05	1,47E+05
SB125				4,80E+05	2,90E+06										1,46E+06					
I131	2,37E+08	3,67E+08	3,86E+08	1,97E+08	1,58E+09	2,63E+09	3,27E+07	2,61E+07	2,52E+07	1,19E+07	1,00E+07	1,46E+07	2,11E+07	2,60E+07	1,42E+07	4,96E+07	8,21E+06	7,24E+06	6,80E+06	6,07E+06
XE131M	1,40E+11	1,14E+12	3,60E+10	1,17E+11	3,03E+10	2,60E+11		2,80E+09	2,50E+09		1,10E+09				3,10E+10			7,30E+10		
CS137	3,44E+05	3,94E+05	3,58E+05	5,57E+05	1,00E+06				3,00E+05	2,80E+05	3,00E+05	2,30E+05	7,40E+04	8,30E+04	1,88E+05		1,50E+05	1,70E+05		
BA140	1,81E+07					3,70E+05														
CE141	6,88E+05			5,42E+04	3,20E+05	6,50E+04														
CE144													3,10E+05							
PU238	4,17E+03	4,66E+04	2,28E+04	3,33E+03	2,57E+04	8,92E+03	8,45E+03	2,71E+03	4,39E+04	4,47E+04	2,62E+05	1,51E+05	6,11E+04	2,15E+05	1,31E+06	2,14E+05	4,78E+04	4,06E+04	2,31E+04	5,38E+03
PU239				5,82E+04	1,80E+03	1,73E+04	2,44E+03	1,56E+03												
PU239&	1,33E+04	1,58E+04	2,77E+03	1,13E+02					5,68E+03	5,94E+03	1,44E+04	8,95E+03	6,46E+03	2,04E+04	3,81E+04	1,70E+04	1,76E+04	6,73E+03	4,93E+03	1,33E+03
AM241	5,76E+04	2,21E+04	1,17E+04	5,13E+03	5,56E+03	1,85E+04	6,21E+03	7,64E+03	4,97E+04	2,28E+04	5,75E+04	9,03E+04	1,28E+05	1,21E+05	6,35E+04	9,38E+04	2,06E+04	7,37E+03	8,22E+03	3,52E+03
CM242	4,42E+02	1,84E+02	7,30E+02	6,83E+02	7,70E+02	3,64E+03	1,77E+03	1,78E+02	2,40E+02			2,20E+03	2,54E+03	4,40E+03	5,20E+03	1,01E+04	2,27E+03	4,95E+02	1,12E+03	8,28E+02
CM244	8,29E+02	1,55E+03	2,88E+03	4,91E+03	8,60E+02	6,71E+02	8,49E+03	6,47E+03	5,47E+02	6,18E+02	2,03E+03	1,70E+03	1,29E+03	1,38E+03	1,62E+03	6,80E+03	2,53E+03		1,24E+03	1,10E+02

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& Pu-239,Pu-240

## STUK - RADIATION AND NUCLEAR SAFETY AUTHORITY

DISCHARGE REGISTER OF HELCOM/MORS  
19.5.2021

## DISCHARGES FROM NUCLEAR POWER PLANTS AND OTHER NUCLEAR FACILITIES

## WESTINGHOUSE ATOM AB - AQUATIC DISCHARGES

NUCLIDE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
CR51									4,16E+06	2,84E+06	4,02E+05	8,19E+05	9,48E+05	3,86E+05	1,87E+05	1,89E+05	5,78E+04	2,46E+04	3,46E+04	3,33E+04
MN54									1,66E+06	1,67E+06	1,86E+05	6,32E+05	6,68E+05	4,21E+05	2,47E+05	1,71E+05	1,00E+05	1,00E+05	1,80E+05	1,37E+05
CO58									1,44E+06	1,15E+06	2,46E+05	4,41E+05	3,76E+05	1,01E+05	6,84E+04	8,66E+04	3,64E+04	1,02E+04	1,90E+04	2,28E+04
CO60	3,98E+06	4,40E+06	6,56E+06	4,60E+06	7,07E+06	1,64E+07	8,35E+06	6,66E+06	1,44E+07	1,18E+07	1,33E+06	4,50E+06	3,57E+06	2,60E+06	1,78E+06	1,06E+06	7,71E+05	1,15E+06	1,25E+06	1,29E+06
AG110M										6,66E+05	1,08E+05	1,43E+05	8,40E+04	1,14E+05	7,43E+04	5,20E+04	1,98E+04	2,70E+04	1,98E+04	6,84E+04
CS137			1,03E+07	3,86E+05	3,99E+05	5,94E+05	8,53E+05	1,17E+06	9,22E+05	2,19E+05	4,80E+04	1,01E+05	1,22E+05	1,11E+05	6,12E+04	4,06E+04	1,52E+04	1,44E+04	5,42E+04	4,82E+04
U233			1,57E+06	6,08E+05	2,24E+06	3,59E+06	7,24E+05	1,32E+06	3,61E+05	3,20E+05	2,12E+05	4,48E+05	4,31E+05	2,01E+05	1,90E+04	3,26E+04	1,42E+04	5,16E+04	7,11E+04	
TH232				3,24E+02	2,24E+02	6,07E+02	1,09E+04	1,01E+04	8,05E+02	5,76E+02	3,15E+02	8,49E+02	8,71E+02	1,13E+03	1,05E+03	1,16E+03	1,10E+03	2,08E+03	1,33E+03	1,66E+03
TH234	3,85E+07	4,76E+07																		
U234	9,66E+07	1,20E+08	5,27E+07	8,06E+07	3,93E+07	1,16E+08	1,66E+07	2,65E+07	3,46E+07	4,79E+07	1,21E+07	1,67E+07	2,82E+07	1,73E+07	1,30E+07	2,43E+07	2,60E+07	1,62E+07	6,04E+06	6,45E+06
U235	4,15E+06	5,26E+06	2,64E+06	3,85E+06	1,77E+06	5,52E+06	8,88E+05	1,27E+06	1,50E+06	1,90E+06	4,97E+05	6,95E+05	1,16E+06	7,23E+05	5,56E+05	1,04E+06	1,11E+06	7,12E+05	2,63E+05	2,85E+05
U236			1,77E+04	2,10E+05	1,22E+05	3,47E+05	4,92E+04	6,09E+04	5,92E+04	6,29E+04	2,34E+04	2,15E+04	3,29E+04	1,84E+04	6,94E+03	1,09E+04	1,10E+04	4,55E+03	1,62E+03	6,12E+02
NP237			1,60E+04	1,30E+04	1,85E+04	6,97E+03	1,44E+04	3,37E+04		2,47E+04	1,95E+05	1,00E+05	9,40E+04	9,00E+03	3,67E+03	9,66E+02	1,78E+03	7,82E+03	8,72E+02	4,88E+03
U238	2,08E+07	2,63E+07	1,21E+07	1,67E+07	8,23E+06	2,47E+07	3,64E+06	5,37E+06	6,13E+06	7,71E+06	1,99E+06	2,74E+06	4,35E+06	2,79E+06	2,21E+06	4,01E+06	4,25E+06	2,76E+06	1,03E+06	1,13E+06

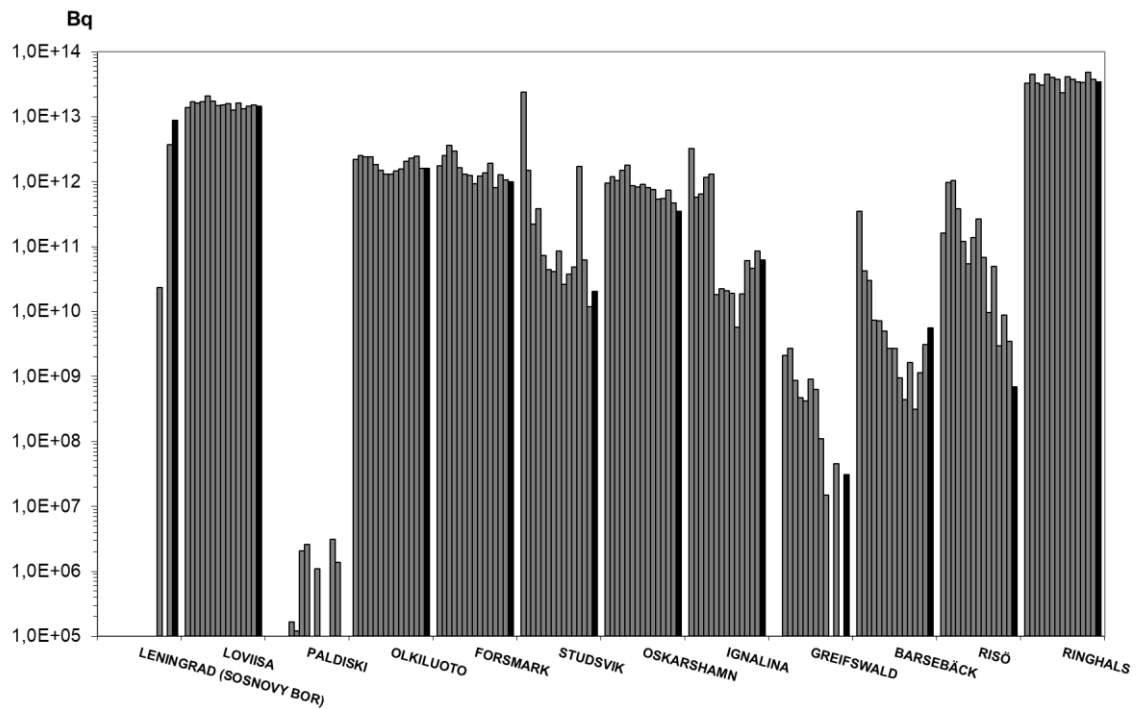
## WESTINGHOUSE ATOM AB - AIRBORNE DISCHARGES

NUCLIDE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
CO60	1,64E+06	2,06E+06																		
TH232				4,50E+01	1,20E+02	2,10E+03	4,70E+02	2,80E+02	2,06E+02	5,78E+02	7,46E+02	1,42E+03	2,99E+02	2,27E+02	4,12E+02	2,24E+02	8,99E+02	3,95E+02	5,33E+02	4,74E+02
U234	7,16E+05	9,11E+05	1,10E+06	1,73E+06	7,04E+05	3,16E+06	8,84E+05	2,01E+06	2,28E+06	2,16E+06	1,42E+06	1,57E+06	1,29E+06	1,97E+06	9,19E+05	1,18E+06	1,41E+06	1,87E+06	2,65E+06	6,26E+06
U235	3,18E+04	3,94E+04	5,54E+04	7,71E+04	3,35E+04	1,49E+05	4,97E+04	9,83E+04	9,16E+04	8,89E+04	5,94E+04	6,44E+04	5,48E+04	8,65E+04	3,99E+04	5,19E+04	6,05E+04	8,05E+04	1,15E+05	2,78E+05
U236			2,26E+03	3,50E+03	1,30E+03	5,10E+03	3,04E+03	3,45E+03	1,98E+03	3,54E+03	2,15E+03	3,09E+03	1,72E+03	1,87E+03	8,76E+02	1,15E+03	1,03E+03	1,38E+03	5,57E+02	1,50E+02
NP237			1,55E+02	2,01E+03	6,45E+02			3,92E+02			5,23E+03	8,33E+03			2,40E+02			1,07E+03	6,44E+02	
U238	1,58E+05	1,96E+05	2,64E+05	3,48E+05	1,47E+05	6,91E+05	2,12E+05	4,01E+05	3,76E+05	3,72E+05	2,58E+05	2,83E+05	2,12E+05	3,34E+05	1,64E+05	2,10E+05	2,90E+05	3,50E+05	4,47E+05	1,10E+06

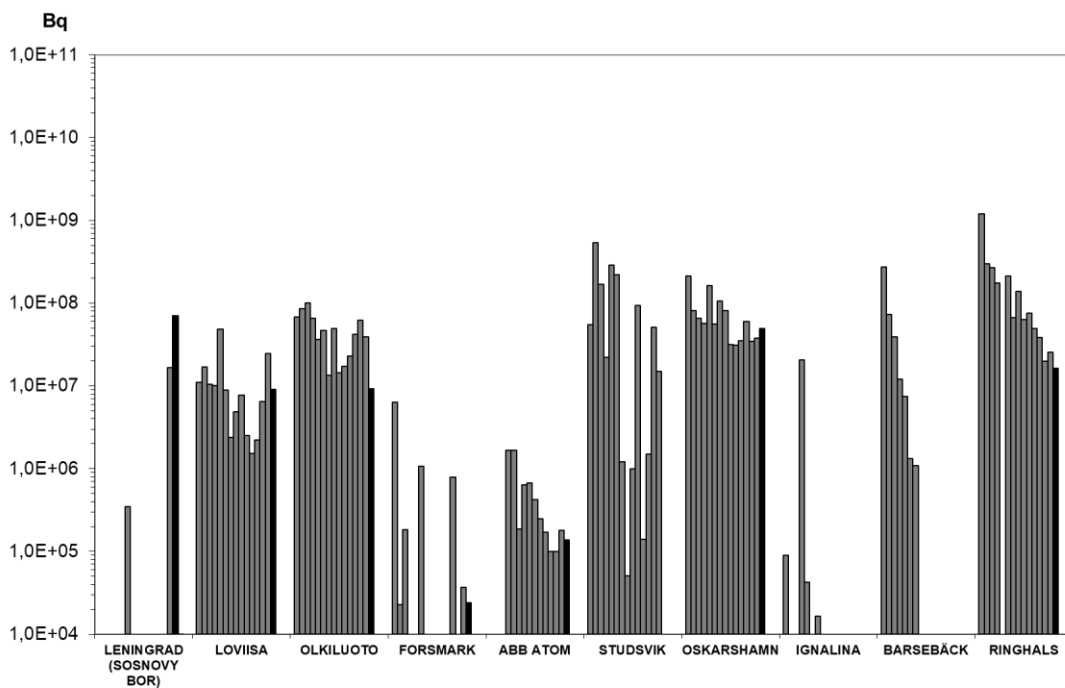


**AQUATIC DISCHARGES OF SELECTED NUCLIDES FROM NUCLEAR POWER PLANTS AND OTHER NUCLEAR FACILITIES IN THE BALTIC SEA AREA IN 2005 - 2019**

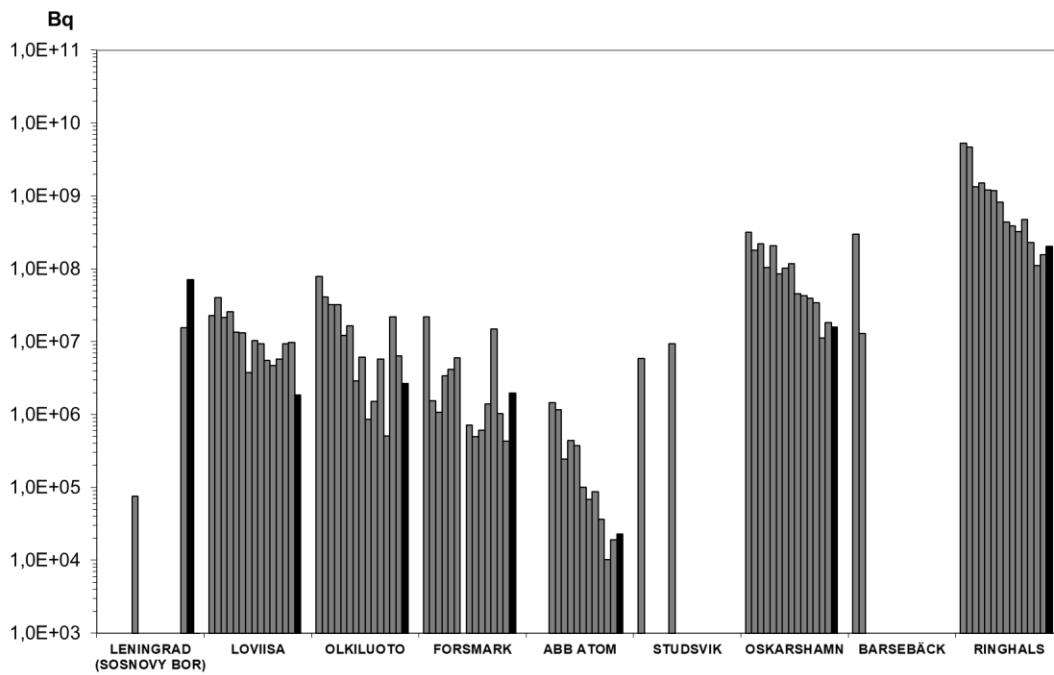
**H-3**



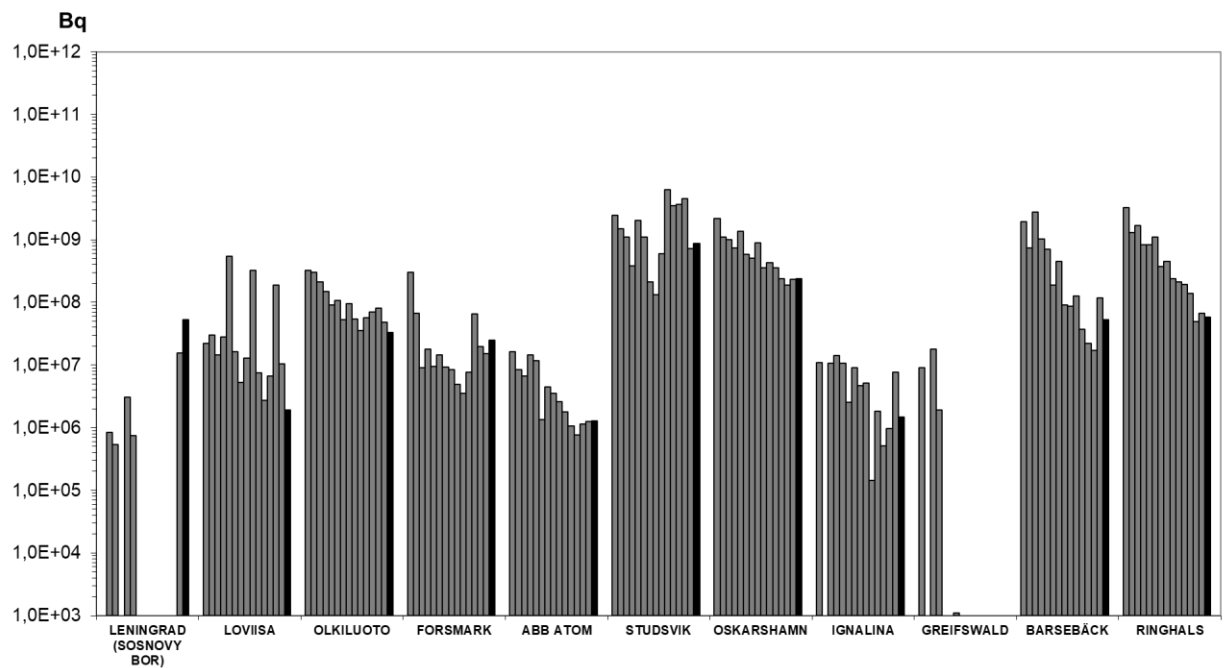
**Mn-54**



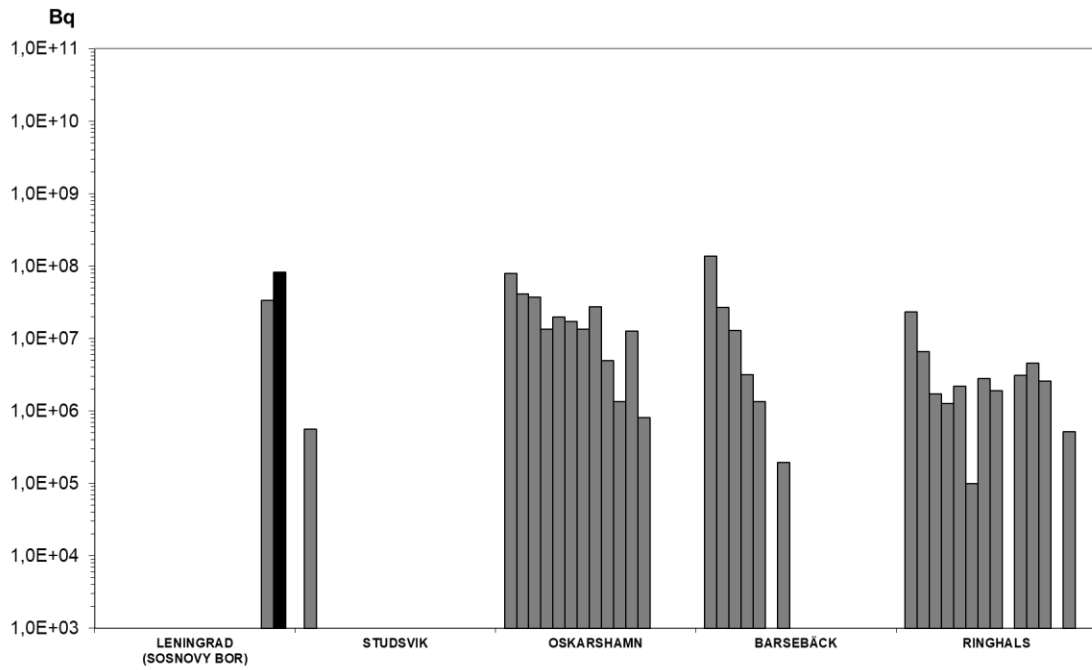
Co-58



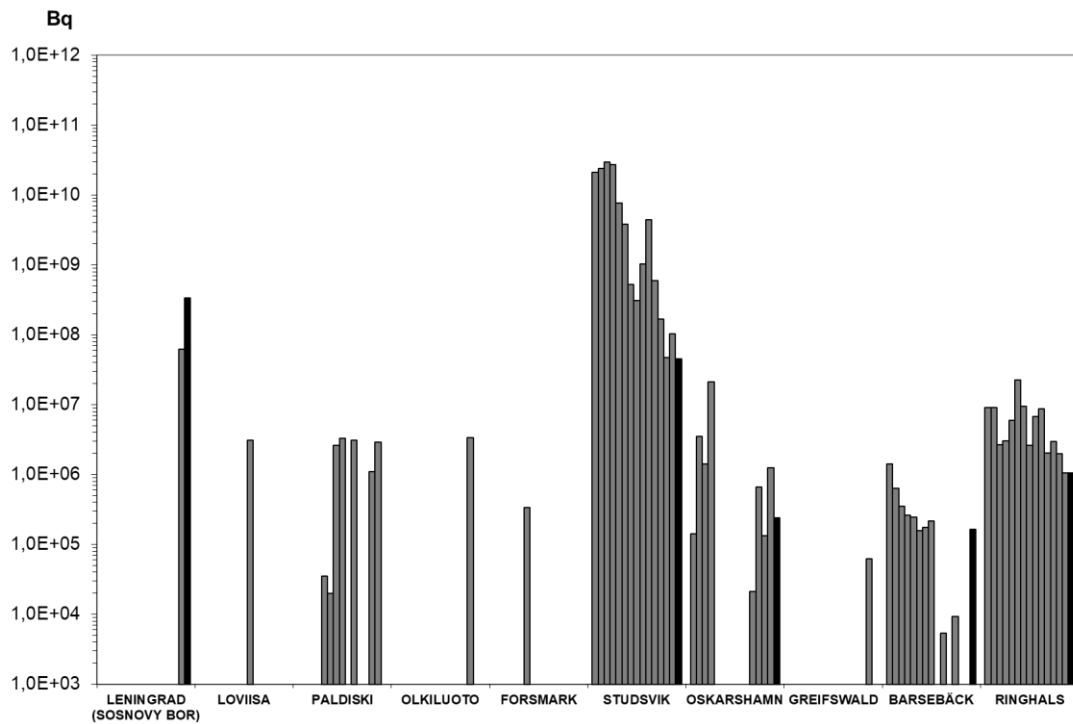
Co-60



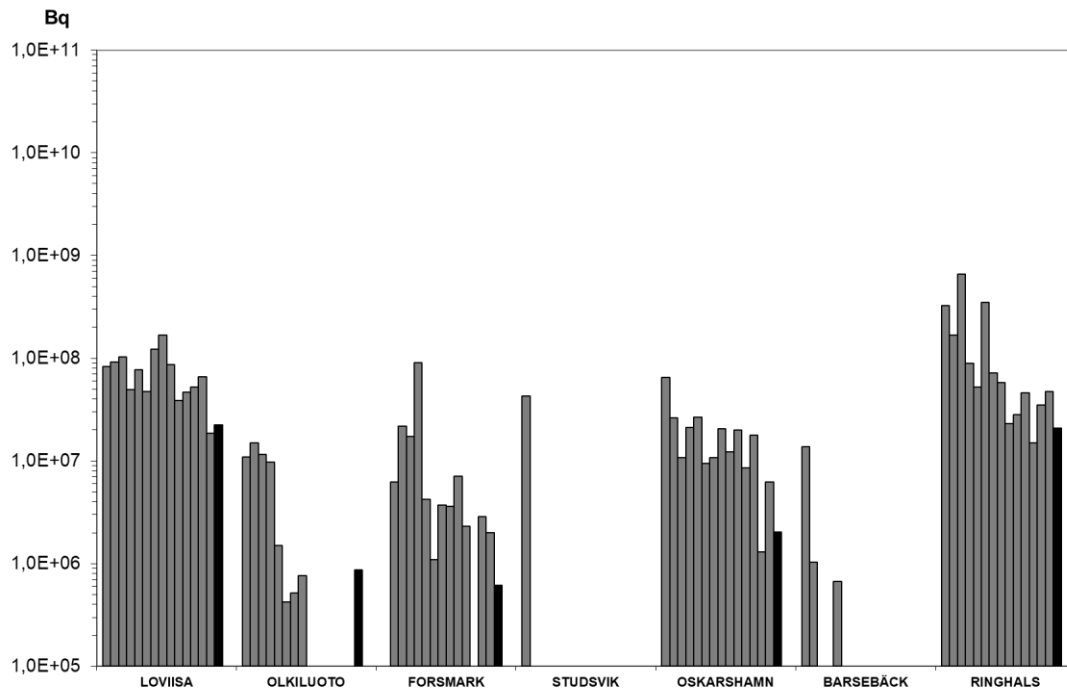
Zn-65



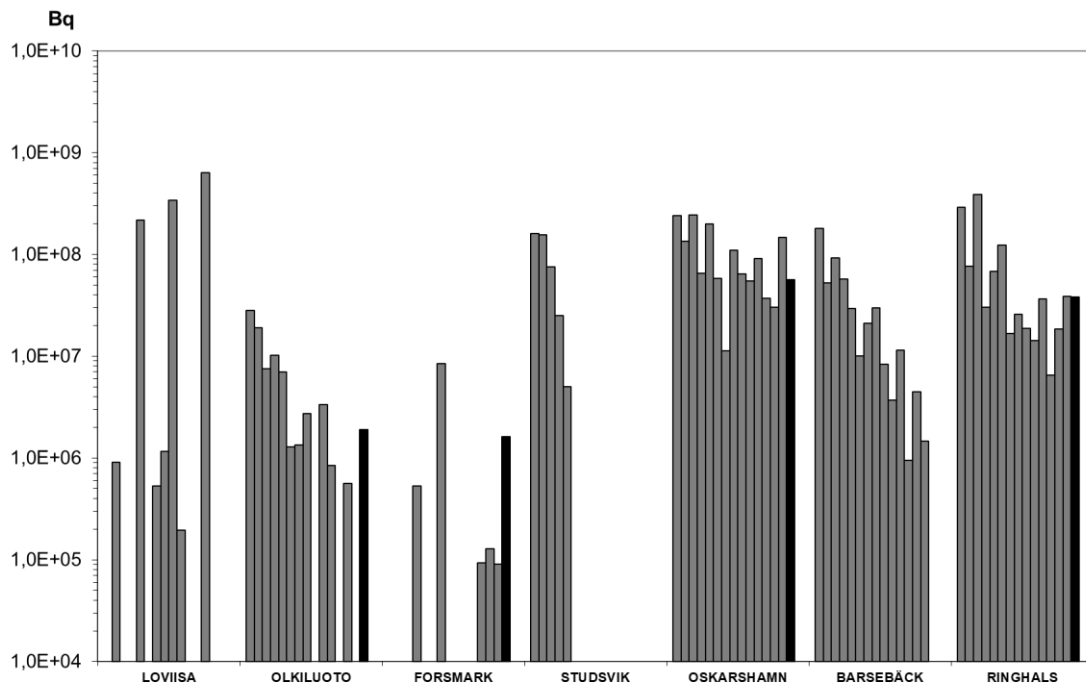
Sr-90



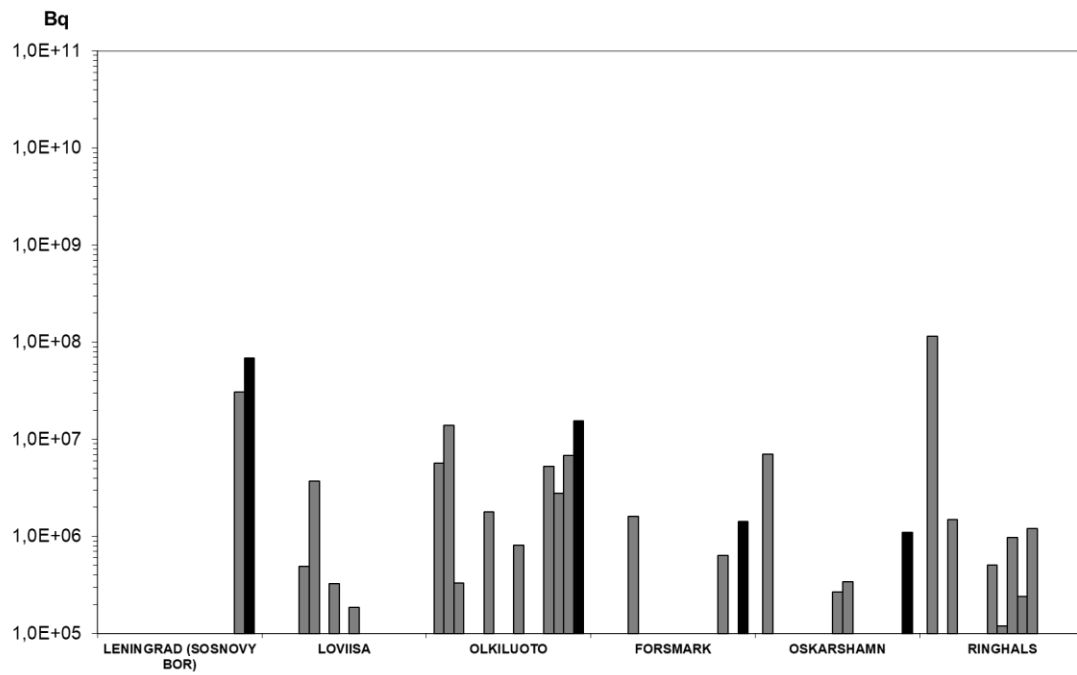
**Sb-124**



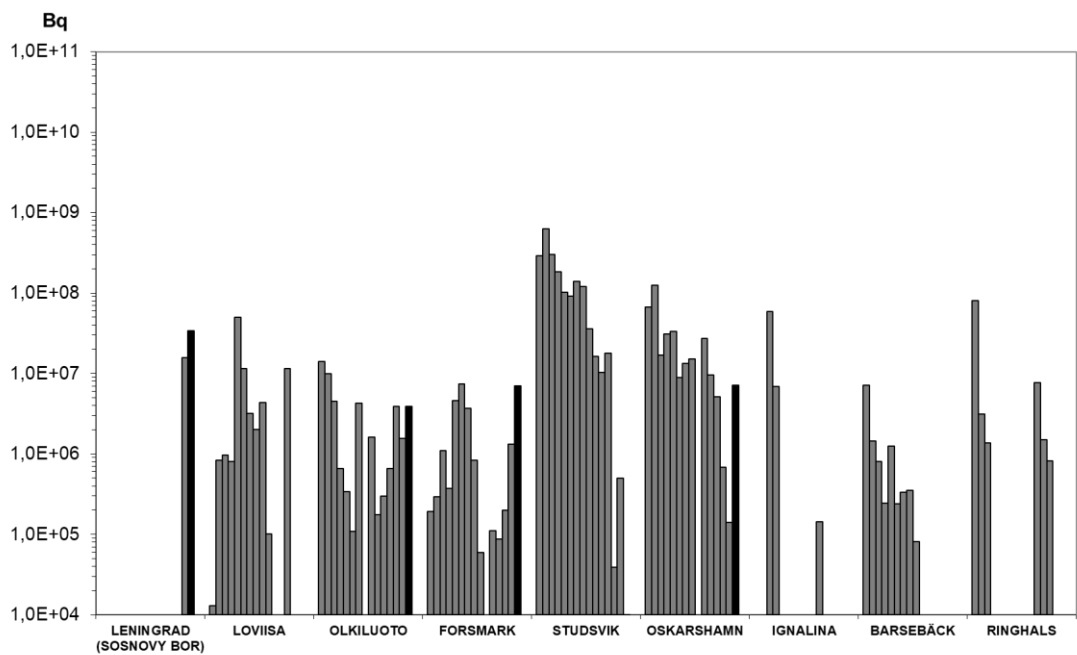
**Sb-125**



I-131



Cs-134



Cs-137

