Polesskoe
Additional information (1)

Table. Radionuclide distribution in soil profile in 1989 (Polesskoe).

Depth of soil, cm	Activity, Ci/km^2					$A_{total.}$ in layer, Ci/km^2
	^{144}Ce	^{134}Cs	^{137}Cs	^{106}Ru	^{125}Sb	
0-1	22,6	4,2	18,2	10,1	3,2	58,3
1-2	5,2	2,1	8,2	3,2	1,02	19,72
3-3	0,8	0,4	1,7	1,5	0,8	5,2
3-4	0,9	0,2	1,0	0,6	0,5	3,2
4-5	0,8	0,05	0,25	0,4		1,5
5-6	0,7	0,08	0,25	0,5		1,53
7-8	0,5	0,03	0,15	0,36		0,94
9-10	0,1	0,015	0,06			0,175
11-12	0,1	0,01	0,05			0,106
14-15		0,01	0,05			0,06
19-20			0,04			0,04

Polesskoe
Additional information (2)

Information on the features of the radiation environment in the settlement of Polesskoe and exposure of the population (according to the data of the 1st of January 1990).

The settlement of Polesskoe occupies 15 km^2. Its population is about 12 thousand, among them 2,5 thousand children.

1. Surface contamination of the settlement territory with ^{137}Cs and ^{90}Sr.

According to the data of Goscomhydromet of the USSR and PE Kombinat, ^{137}Cs content has been analysed in 441 soil samples taken in the territory of the Polesskoe settlement between the 5th of July 1986 and December 1989. The results obtained are given in the Table.

Table. ^{137}Cs content in soils of Polesskoe settlement.

Date of sampling	Density of surface contamination with ^{137}Cs, Ci/km^2			
	Minimum	Maximum	Average	Number of samples
05.07.86	4,8	36,5	62	4
09.07.86	0,91	19,6	51	12
29.07.86	3,3	32,0	63,6	3
8-9.08.86	2,1	34,1	70,4	21
28-30.10.86	0,23	31,5	112	35
11.12.86	0,59	15,9	100	8
12.07.87	2,3	21,3	63	20
09.87	11,2	25,4	92,9	206
17.11.89	0,6	37,8	112	14
PE Kombinat				
1989	0,6	37,5	1-5	225
23.12.89	1,1	25,1	151	67

As is evident from the Table, there is considerable non-uniformity of soil contamination with ^{137}Cs.

When analysing the distribution of the density of soil contamination with ^{137}Cs over the territory of the settlement, one can notice that in a number of cases (area adjacent to Karl Marx, 8th of March, Volia and Mir streets) the values of some measurements can reach 70 Ci/km^2 and more. The contamination of homesteads in the western and north-western parts of the settlement (Naberezhnaia, Gaidara, Rechnaia, Shevchenko and Parkhomenko streets) is about 15 Ci/km^2, and that of the homesteads in the south-east outskirts is only a few Ci/km^2.

Along with this, soil contamination with ^{90}Sr is within 8.5 Ci/km^2 (the 3rd km of the road to the village of Vladimirovka), about 5-6 Ci/km^2 (a homestead in 48, Karl Marx street), and 0.46 Ci/km^2 in the flood-lands of the river Uzh (near Lugovaia street).

2. General characteristics of gamma radiation field within the territory of Polesskoe settlement.

In view of the established non-uniformity of soil contamination with caesium, which is the main gamma irradiator, there appears a practical interest of carrying out the analysis showing the degree to which this feature affects the gamma radiation dose distribution within the territory of the settlement.

To analyse the gamma radiation dose distribution within the territory of the settlement, the whole mass of data on direct measurements of gamma radiation levels made by PE Kombinat and UkrHydromet before December 1989 was used. Distribution of gamma radiation level values over the territory of the settlement is characterised by the following values:

for 5% of the area, the levels do not exceed 0.06 mR/hour;

for 45% of the area, the levels are in the range 0.06-0.12 mR/hour;

for 50% of the area, the levels are from 0.12 to 0.3 mR/hour.

Besides, some points were found where gamma radiation levels reached 1 mR/hour, while near the gutters they were up to 3.5 mR/hour.

In accordance with the given distribution, the average dose rate for the territory of the settlement was 0.15+/-0.02 mR/hour.