

Table 1. 3. The dynamics of dose formation (external X-ray exposure) for the residents of some populated areas in Abaisky district

(after H-bomb explosion in 1953)

	Time after beginning of irradiation (days)					Total accumulated dose
	1	7	30	90	365	
In the open (cGy)	1	8	23	43	54	
For population (cSv)	1	6	17	32	40	42

The main part of the dose of external radiation exposure to the population of some populated areas in Abaiski district was received during one year. Considering the case of the evacuated population after the said H-bomb explosion, they were exposed to 2% of the future total radiation exposure dose on the first day, 15% in the first week, and 41% in the first month.

The doses of internal radiation exposure are shown at the table 1.4. As is evident from the presented data, the irradiation of internal organs and bone tissues of the population, evacuated to "safe" zones was less than that of those who were not evacuated, especially in comparison with the explosion of the first A-bomb in 1949. Taking external irradiation and shielding coefficient (0,6) into consideration, the tissue doses were equal: 215 cSv to bone marrow, 150 cSv to the digestive organs, and 130 cSv to the thyroid gland.

Table 1. 4. Tissue doses from incorporated radioactive substances (ingested with food and water) of the population of some populated areas (cSv)

(after H-bomb explosion in 1953)

	Time after beginning of irradiation (days)				50 years
	7	30	90	365	
Skeleton	0.1	1	1	1	1
Thyroid gland	2	13	18	18*	18*
Digestive tract	1	3	5	7	7

Note: * - Tissue doses to children's thyroid gland are 5-10 times greater because of higher milk consumption

It must be emphasized that only a part of the population of the Abaisky district was evacuated. Residents of other districts were not evacuated. Both the explosion, made in 1949 and that made in 1953, were conducted in the late summer, crop-harvesting season, when almost the entire adult population of rural areas worked in the fields from early morning, just after the dawn, to late evening. The conclusion is that the external radiation exposure doses were almost equal to the doses in the open.

Unfortunately, we have no data on the radiation exposure doses of the population from the atomic bomb explosion of 1951.

Hundreds of other explosions were made after 1953. Therefore, the population of the Semipalatinsk region were exposed to excessive doses of ionizing radiation during the whole period of testing at the Semipalatinsk nuclear test site (1949-1989 years). The data on the total radiation exposure doses for this period and later (from 1949 to 1992) are shown in the table 1. 5.

Because of nuclear testings all the areas of the Semipalatinsk region were contaminated by radioactive substances. The minimal dose on the ground was 500 milliroentgen. The highest dose of radiation exposure in the populated area of Tailan was as high as 1000 Roentgen!

Officially reported doses in the open and calculated doses from the fallout show that they constitute a significant dose equivalent for the population in the Semipalatinsk area.

Absence of alternative (besides military experts) control of some parameters of radiation exposure and some antihuman laws, which permitted an annual dose to the population of up to 50 cSv, were the reasons of not carrying out any measures for the protection of the population from exposure to ionizing radiation.