

## Chapter 1 Dosimetry

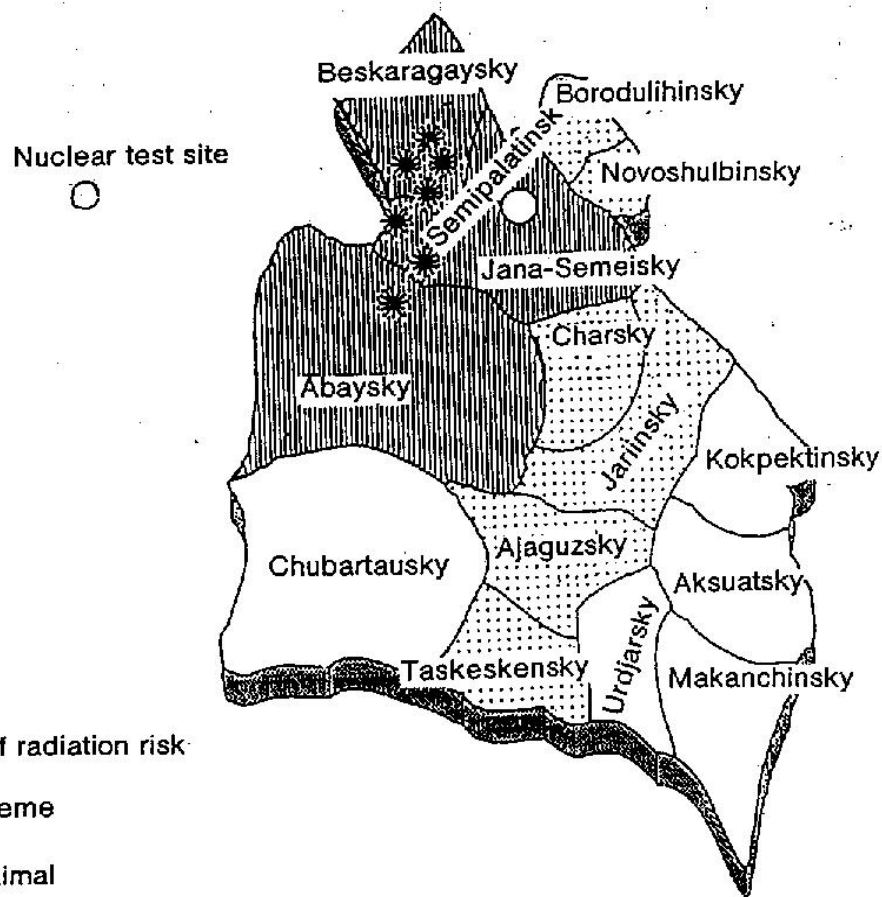
### 1. Studies of radioactivity produced by nuclear tests at the Semipalatinsk nuclear test site

#### The brief historic review





In 1949, on the left bank of the Irtysh River, 150 kilometers away from Semipalatinsk, construction of a nuclear test site was completed. And over the whole period that tests were made (from 1949 to 1989) control of radiation doses was exercised by the USSR Defense Department. There were no alternative control by another department or institution.

In 1957, by the order of the Health Minister of the former USSR, a special medical institution of the secret type, "Dispensary N4" was opened. In order to hide from the population the real aims of this institution, which were investigation of the health of the residents living near the nuclear test site and measurement of radiation exposure doses, it was named "Antibrucellosis Dispensary". But during the whole period, that this Dispensary was in existence, from 1957 to 1991, not a single patient with real brucellosis, a sort of special infectious disease, was treated at this institution. Until 1991 the staff of the Dispensary was too inexperienced to achieve the goal of radiation dosimetry; during almost 20 years, the staff of the Dispensary (who conducted medical investigations of the exposed population) used in their work the parameters of only two atmospheric explosions, made in 1949 and 1953, calculated according to the methodology of the Defense Department.

Figure 1. Semipalatinsk region



Picture 1. Zones of radiation risk:

-  Extreme
-  Maximal
-  Increased
-  Minimal