

# Support Measures for Victims of Soviet Nuclear Testing in Kazakhstan<sup>1</sup>

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## 1. Introduction

The Republic of Kazakhstan, which is the ninth largest country in the world and which is located in the middle of Central Asia, was part of the Union of Soviet Socialist Republics (USSR) until its independence in 1991. As a major Soviet nuclear development base, Kazakhstan was home to a large number of nuclear facilities, whose core facility was the Semipalatinsk Nuclear Test Site (SNTS, see Figure 1)<sup>2</sup>. Since its use as the site of the first Soviet nuclear test on August 29, 1949, the SNTS was used for a variety of nuclear tests—surface, air, and underground. It was used for a total of 456 nuclear tests<sup>3</sup>, comprising 60% of all 715 nuclear tests conducted in USSR territories.



Figure 1. Semipalatinsk Nuclear Test Site, Republic of Kazakhstan

The SNTS has an area of approximately 18,000 sq. km and forms part of a vast steppe region. Its open terrain and the weather at the time of the nuclear tests, such as strong winds and pressure patterns, helped nuclear clouds and thus

<sup>1</sup> This is a translation of a revised version of the original Japanese article, Hirabayashi 2020 (translated by Yuichi Yokoyama; proofread by Annelise Giseburt).

<sup>2</sup> “Semipalatinsk” is the Russian name of the town, which was later renamed “Semey” in Kazakh. To avoid confusion, this article uses “Semipalatinsk.”

<sup>3</sup> 25 surface tests, 86 air tests, and 345 underground tests were conducted at the SNTS (Mikhailov et al. 1996).

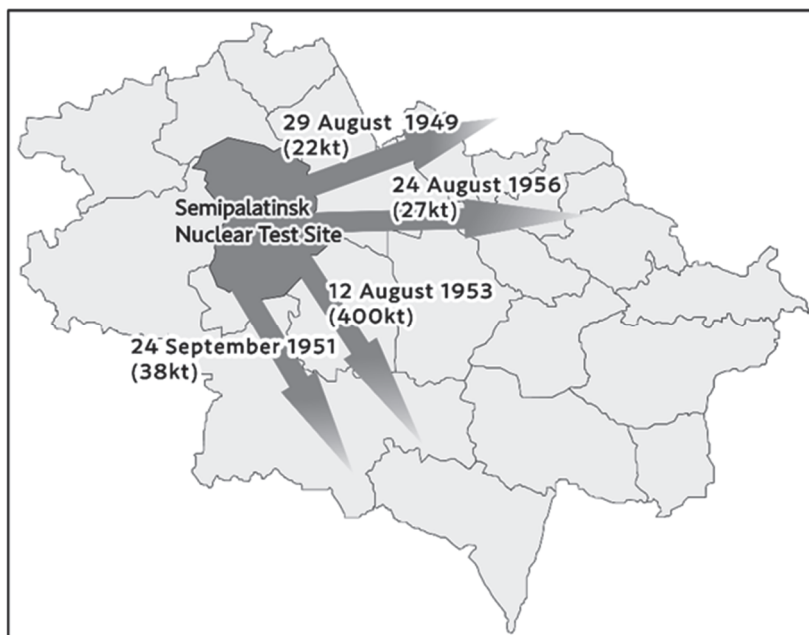


Figure 2. Dates of the four nuclear tests that are considered to have caused especially severe damage, and directions of movement of radioactive clouds in each of the tests (the amount of energy released is shown in parentheses).

nuclear damage spread far, especially to the area east of the site (the current East-Kazakhstan Region; see Figure 1). As a result, hundreds of thousands of local residents around the site were affected by radioactive fallout from the tests (Katayama et al. 2006).

*At the times of the explosions, we were children, running outside and watching as many-colored mushroom clouds grew.*<sup>4</sup>

*After a while—months, years—people started to ache very often, and they developed gastrointestinal, skin, blood diseases. Cases when children with disabilities were born or people were dying of heart failure became frequent. My brother died suddenly at the age of 39, my brother’s daughter died of hydrocephalus when she was only 20 months old. Death and grief became regular visitors to our village.*<sup>5</sup>

Residents did not know that nuclear tests were conducted at the SNTS, and some of them were evacuated from their homes so that they could avoid damage caused by shock waves and ground shaking (such as building collapse). Moreover, for a long time, they have been internally exposed to radiation through ingesting radioactive food such as vegetables, grains, and livestock.

This article describes the characteristics and issues of the support measures that have been implemented to compensate victims of nuclear testing at Semipalatinsk. This article offers new insights while drawing mainly on Takemine et al. 2015.

<sup>4</sup> Interview with a woman (born in 1951) in Sarzhaly Rural County, 2003.

<sup>5</sup> Interview with a woman (born in 1938) in Dolon Rural County, 2003.

## 2. Goals of Kazakhstan's Support Measures

Support measures for victims of nuclear testing in Semipalatinsk are specified in a law enacted by the Kazakhstan government in 1992, entitled, "On Social Protection of Citizens Who Suffered from Nuclear Tests at the Semipalatinsk Nuclear Test Site" (hereinafter referred to as "Semipalatinsk Social Protection Law")<sup>6</sup>.

Its preamble states that the nuclear tests "have caused irreparable damage to human health and the environment." It also provides, "The elimination of these consequences requires the implementation of a set of measures for the treatment, health improvement, rehabilitation, social protection of the population and socioeconomic development of the territory." Article 1 defines the objective of the law as "to provide social protection to citizens who suffered from lengthy nuclear tests at the Semipalatinsk nuclear test site," and provides that the law "determines the types of compensations, benefits and measures for socioeconomic development of the territory."

Article 3 defines the state's obligations, stating that the state is "obliged to ensure the right of citizens affected by nuclear tests to compensation for damage to their health and property" and that "[t]he state assumes responsibility for the performance of a set of necessary measures and legal protection of citizens."

It is the former USSR that repeatedly conducted nuclear tests, and its succession state is the current Russian Federation, but this law does not refer to this point. It names the Kazakhstan state as the subject responsible for compensating victims.

## 3. Eligibility: Who Are the Victims of the Nuclear Tests?

As is already mentioned, damage from the nuclear tests concentrated on the east side of the SNTS. The Semipalatinsk Social Protection Law categorizes the affected area into the following five zones based on the dose of the population's exposure to radiation and defines compensation for each of them.

"Extraordinary radiation risk zone": This zone includes the following five places where the dose of the population's radiation exposure exceeded 100 rem<sup>7</sup> over the entire testing period: Sarzhaly Rural County, Dolon Rural County, Sarapan Locality, and Isa Locality.

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<sup>6</sup> This article refers to Legal Information System n.d.a for an English translation of the law.

<sup>7</sup> "Rem" is a unit of equivalent dose. The rem is defined as equal to 0.01 Sv.

“Maximum radiation risk zone”: This zone includes the areas where the dose of the population’s exposure is the second largest—from 35 to 100 rem. Abai District and Zhanasemey District are included in this zone.

“Increased radiation risk zone”: This zone includes the areas where the dose of the population’s exposure is from 7 to 35 rem. Included in this area are urban areas such as Semipalatinsk City and Ust-Kamenogorsk City and the areas west of the test site except East-Kazakhstan Region.

“Minimum radiation risk zone”: This zone includes the areas where the effective equivalent dose is from 0.1 to 7 rem.

“Territory with preferential socioeconomic status”: The above four zones do not include Bayanaul District in Pavlodar Region, which is a district located west of the test site. While it is assessed that the dose of the population’s exposure in this district is below 0.1 rem, it is designated as “territory with preferential socioeconomic status,” because it was subject to “a significant negative impact from psycho-emotional stress associated with living near radiation and seismically hazardous areas.”

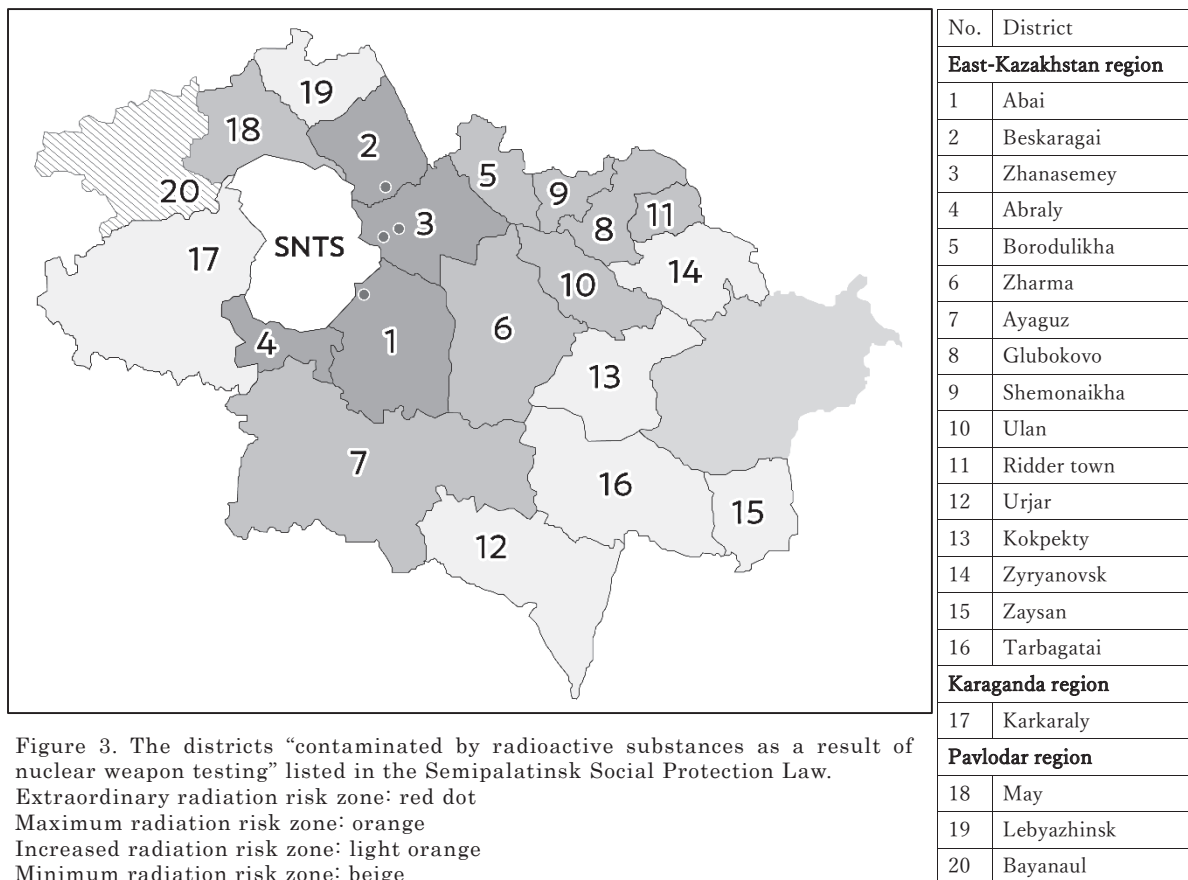


Figure 3. The districts “contaminated by radioactive substances as a result of nuclear weapon testing” listed in the Semipalatinsk Social Protection Law.  
 Extraordinary radiation risk zone: red dot  
 Maximum radiation risk zone: orange  
 Increased radiation risk zone: light orange  
 Minimum radiation risk zone: beige  
 Territory with preferential socioeconomic status: blue shaded

The Semipalatinsk Social Protection Law defines all the citizens who either lived, worked, or served in the army in designated areas as the “victims of nuclear tests” and provides them with compensation. In many other countries where nuclear tests were conducted, compensation is provided when those entitled show symptoms. Kazakhstan is different from these countries in its notion of support measures for nuclear victims. It is highly notable that Kazakhstan entitles residents (as well as workers and servicepeople) to compensation based only on the fact that they were present in the designated zones—which have a total area of approximately 280,000 sq. km<sup>8</sup>.

Furthermore, if children of the people in the designated zones have disabilities or diseases that have an established causal relationship with nuclear tests, they are also designated as “victims of nuclear tests” and are entitled to compensation. There are no other aid policies that acknowledge the impacts of nuclear testing on second-generation victims, and thus this can be deemed as the most distinctive feature of the Semipalatinsk Social Protection Law.

#### **4. Compensation**

There are three types of compensation specified in the Semipalatinsk Social Protection Law: a one-time monetary compensation, a pension supplement and additional wage, and annual additional paid leave and maternity leave. All the eligible people mentioned in the previous section are entitled to these three kinds of compensation. While medical care is one of the primary compensations for victims of nuclear tests in other countries, it is not included here, because Kazakhstan inherited the USSR’s socialist policy of providing free medical treatment to all citizens. Nevertheless, there are some special medical care benefits available to the victims, which are detailed in the next section.

This section details the three kinds of compensation.

##### **4.1. One-time Monetary Compensation**

Calculation of the amount of one-time monetary compensation, as well as additional pension and income, is based on a “monthly calculation index.” It is a basic amount used in calculation of all kinds of social security in Kazakhstan and is updated as needed. Calculation of the amount of one-time monetary compensation is based on this index as

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<sup>8</sup> East-Kazakhstan Region alone has an area of 283,200 sq. km. See Figure 2 for the areas where support measures are implemented, which includes most of East-Kazakhstan Region and parts of Pavlodar and Karaganda Regions.

well as the zones of radiation exposure. For example, in the “extraordinary radiation risk zone,” where the dose of the population’s radiation exposure is the largest, an eligible person is entitled to 5.23 times the monthly calculation index for each year of residence within the period from 1949 to 1965 and 1.05 for each year from 1966 to 1990.

Suppose a person lived in this zone from 1949 to 1990 and applied for the one-time monetary compensation this year<sup>9</sup>. Since the present monthly calculation index is 2,917 Kazakhstani tenge (approximately 6.4 US dollars<sup>10</sup>), this person is entitled to a total of approximately 335,921 tenge: approximately 259,350 tenge for the 17 years of residence from 1949 to 1965, and approximately 76,571 tenge for the 25 years from 1966 to 1990.

335,921 tenge is about 1.6 times Kazakhstan’s average monthly wage in 2020, which was 213,003 tenge<sup>11</sup>. This means that if a person either lived, worked, or served in the army consecutively for 42 years within the zone where the dose of the population’s radiation exposure was the largest, this person is entitled to 1.6 times the national average monthly wage as the one-time monetary compensation.

#### **4.2. Pension Supplement and Additional Wage**

Pension supplement is available to citizens in the “extraordinary radiation risk zone” and the “maximum radiation risk zone.” Those in the former are entitled to 2.09 times of monthly calculation index, and the latter 1.83. Note that if a causal relationship is established between the nuclear tests and a disability or loss of the breadwinner in a household, pension benefits are available regardless of the duration of service by the disabled person or breadwinner.

The amount of additional wage in each of the zones is, in order of the dose of the population’s radiation exposure, twice of the monthly calculation index, 1.75 times, 1.5 times, 1.25 times, and the equal amount to the index.

#### **4.3. Additional Paid Holidays and Maternity Leave**

Additional paid holidays have not been made available to victims of the use or testing of nuclear weapons in the other countries we have examined in this comparative study. On the other hand, in some former republics of the USSR, additional paid holidays are available as one of the support measures for victims of the 1986 accident at the Chernobyl nuclear power plant<sup>12</sup>. The Semipalatinsk Social Protection Law provides that, in order of

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<sup>9</sup> In reality, it is considered that many people made applications around 2006, when laws related to the one-time monetary compensation were enacted.

<sup>10</sup> As of August 6, 2021, the Kazakhstani tenge is equal to approximately 0.0023 US dollars (<https://ja.exchange-rates.org/rate/kzt/usd/2021-08-06> (accessed on December 1, 2020)).

<sup>11</sup> Bureau of National Statistics 2021.

<sup>12</sup> The former USSR, Ukraine, Belarus, and Russia legalize(d) support system for Chernobyl

the dose of the population's radiation exposure in each zone, citizens are entitled to 14, 12, 10, 7, or 5 additional paid holidays.

In contrast, regardless of the zones, 170 days of additional maternity leave are available to the women having a full-term normal delivery, and 184 days to those having abnormal delivery (including multiple births). Also, those having a premature delivery are entitled to 184 days of additional maternity leave, and those having a stillbirth 170 days.

Article 14 of the Semipalatinsk Social Protection Law, which defines the above-mentioned additional maternity leave, also defines that children under the age of 18 are entitled to free health care for medical reasons in sanatorium and health facilities. At the same time, the same article provides that leave a parent takes to take care of a sick child is paid for the entire period of the child's illness.

## 5. Medical Support Measures

This section details the medical support measures defined in the Semipalatinsk Social Protection Law.

Article 17, "Organization of public medical care," states, "Persons specified in this Law are subject to comprehensive medical examination." This article requires: the State Register to be drawn up for the people's personal record; medical check-ups to be carried out by health facilities at the place of their residence or work; extraordinary specialized medical care to be provided by all public health facilities in Kazakhstan; and budgetary measures to be taken for the health facilities.

Next, Article 18 defines "[t]he procedure for establishing the causal relationship of diseases with nuclear tests at the Semipalatinsk nuclear test site." In relation to this article, the Kazakhstan government published a "List of diseases connected with nuclear tests" in 2004. In 2019, the list was revised as "List of diseases connected with exposure to ionizing radiation"<sup>13</sup>.

In order to implement Articles 17 and 18, the Kazakh Scientific Research Institute for Radiation Medicine and Ecology is appointed to the Regional Interdepartmental Expert Council (RIEC). As such, the institute is in charge of registration of personal information and examination of the causal relationship of diseases with exposure to radiation.

I have been conducting interviews with children with diseases and/or disabilities and their parents. Some of the interviewees informed me of the specific compensations they

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victims.

<sup>13</sup> For an English translation, see Legal Information System n.d.b.

have obtained. “If a disease is caused by the polygon<sup>14</sup>, then you will get 10,000 or 15,000 tenge more.”<sup>15</sup> “I get about 16,000 to 18,000 tenge once a month.”<sup>16</sup> My interviewees testified about monetary compensations that are granted if the children’s diseases and/or disabilities are deemed to have a causal relationship with nuclear tests. In addition, some testified that treatment costs and costs of travel for treatment were also compensated. Even though medical care is generally free in Kazakhstan, some expensive medical treatments and medicines are not covered. Moreover, if they want to receive advanced medical treatment, people have to go to Nur-Sultan, the capital of Kazakhstan. My interview data show that much of these expenses are covered by the state.

Based on my interview data, it is also possible that not only the children but also the people who were directly exposed to nuclear tests themselves are obtaining monetary compensations other than the one-time monetary compensation and pension supplement/additional wage, if their diseases or disabilities are deemed to have a causal relationship with nuclear tests. As the 2019 “List of diseases connected with exposure to ionizing radiation” lists diseases that are related to direct exposure to radiation, it is expected that people with listed diseases are entitled to some kind of support. The list also includes diseases of victims’ grandchildren, which shows that support for victims’ grandchildren, as well as children, is assumed.

## 6. Discussion

As I wrote in the first section, the preamble of the Semipalatinsk Social Protection Law states that nuclear tests have caused irreparable damage not only to human health but also to the environment. A person entitled to the support based on the law are granted a certificate, which people call an “Environment Certificate.” This shows that people share a similar perspective with the preamble. Even one nuclear test causes tremendous damage, but in Semipalatinsk, numerous tests were repeatedly conducted for a long time, and radioactive substances will remain in the soil semi-permanently. Given this condition, it is reasonable to understand that the nuclear tests damaged the natural environment. As a result of the environmental damage, people will be forced to be always concerned with their health, even if they currently appear healthy. The support system enables victims to receive monetary compensation throughout their life in the form of one-time monetary

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<sup>14</sup> The word “polygon” is used to refer to the nuclear test site based on its form, as well as the nuclear tests conducted at the site.

<sup>15</sup> Interview with a parent of a 9-year-old girl with a chromosomal abnormality, 2013.

<sup>16</sup> Interview with a parent of a 16-year-old girl who got affected with malignant lymphoma, 2019.



compensation, pension supplement, and additional wage. This implies that the support system is designed to compensate for not only the past and the present but also the future—in which victims will have to continue living in the damaged environment that cannot be restored. It is worth praising that this support system was enacted no more than a year after closure of the nuclear test site.

As mentioned in Section 3, some former republics of the USSR make additional paid holidays available as a measure to support victims of the Chernobyl accident. This accident, which happened in the former USSR, and the support system for its victims had significance too for Kazakhstan, where many nuclear-related facilities were located, and it is probable that the support system for the Chernobyl victims was used as a reference when Kazakhstan designed the support system for the victims of nuclear tests at the SNTS. Furthermore, other features of the Semipalatinsk Social Protection Law also seem to have been modeled after the support system for Chernobyl victims. The Chernobyl support system sets different zones in accordance with the extent of contamination and differentiates support measures accordingly, as well as makes compensations not for victims' present diseases but for victims' future health risks caused by their residency in contaminated areas. This point – what a support system is designed to compensate for – is fundamentally different from victim support system in other countries. This basic idea common in the support system of the former USSR republics provides an instructive example when we consider the future of the support system for the victims of the Fukushima Daiichi nuclear disaster.

Kazakhstan's support system, however, is not a panacea. The amount of one-time monetary compensation is lower than that in other countries, and the amount of pension supplement and additional wage is not sufficient. In the fieldwork and on-site interviews that I conducted, I found many residents requesting further compensation, for example by saying, “We need higher polygon pension,” while some told me that the pension supplement or additional wage helped them cover living expenses. While compensations were cut down in the past revisions of the Semipalatinsk Social Protection Law<sup>17</sup>, the victims are in need of stable, continued support.

Kazakhstan ratified the Treaty on the Prohibition of Nuclear Weapons (TPNW) on August 29, 2019, which was the 70th anniversary of the first nuclear test in Semipalatinsk. The preamble of the TPNW provides, “The States Parties to this Treaty, [...] Cognizant that the catastrophic consequences of nuclear weapons [...] have a disproportionate impact on women and girls, including as a result of ionizing radiation.” The Semipalatinsk Social

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<sup>17</sup> For example, an article on scholarships was deleted. For details, see Takemine et al. 2015.

Protection Law sets support measures for women and children who are more susceptible to radiation, such as additional maternity leave, and thus shares a common recognition of disproportionate impacts of nuclear weapons on the vulnerable population. August 29 is also the day on which the closure of the SNTS was declared in 1991, and this day is set as the International Day against Nuclear Tests by the United Nations General Assembly. Since its independence, the Kazakhstan government has been consistently advocating the prohibition of nuclear tests and the abolition of nuclear weapons and has attained many achievements. For example, soon after the dissolution of the Soviet Union, the government determined the removal (relocation to Russia) of nuclear weapons left within its territory. Also, it campaigned for the conclusion of the Central Asian Nuclear-Weapon-Free Zone treaty and for the Comprehensive Test Ban Treaty to enter into force. On the other hand, Kazakhstan is a resource-rich country and one of the world's largest uranium producers. Thirty years have already passed since the closure of the SNTS, and it is concerned that the memories of the impacts of the nuclear tests are fading away. The future of the support measures for victims of nuclear tests in Kazakhstan deserves continued attention.

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