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C O N C E P T

OF LIVING CONDITIONS FOR PEOPLE IN THE REGIONS AFFECTED BY THE CHERNOBYL ACCIDENT

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A CONCEPT OF LIVING CONDITIONS FOR PEOPLE IN THE REGIONS AFFECTED BY THE CHERNOBYL ACCIDENT

The present concept has been developed in accordance with the Decision of the USSR Supreme Soviet of 25.04.90 No. 1452-1 "On a unified program for elimination of the consequences of the accident at the Chernobyl NPP and the situation bound up with the accident", the Decision of the USSR Council of Ministers of 30.06.90 No. 645 "On ensuring the fulfillment of the Decision of the USSR Supreme Soviet of 25.04.90 No. 1452-1" as well as the relevant decisions of the Byelorussian, Russian Federation and Ukrainian Supreme Soviets.

OBJECTIVE OF THE CONCEPT

The present concept is aimed at formulating the principles and criteria to substantiate practical measures on mitigation of possible negative impacts of the Chernobyl accident on public health and to compensate for damages caused.

In drawing up the concept allowances were made for:

-All protective measures taken earlier, including relocation (evacuation).

-Data available on radiation situation and population exposures.

-State of public health and socio-psychological situation in contaminated regions.

-Ideas of present-day world science about biomedical effects of ionizing radiation.

-Principles of radiation protection and intervention levels for postaccident situation, including those recommended by international organizations (*).

(*)The Nuclear Energy Agency of the Organization for Economic Cooperation and Development (OECD/NEA) drew up in 1990 recommendations on intervention levels in case of a nuclear accident. The whole-body dose of 0.5 Sv (50 rem) and the effective dose of 0.3-0.5 Sv (30-50 rem) for short-term (days, weeks) and long-term (months, years) irradiation, respectively, are proposed as an intervention level above which evacuation (or relocation) is required. The dose of 0.1-1 mSv (10-100 mrem) for the first post-accident year is proposed as a non-action level (see Report of OECD/NEA expert group. Protection of population in case of a nuclear accident. - OECD, Paris, 1990).

-State of agricultural production, real contamination of food products, in particular milk, as well as the feasibility of reducing contamination.

-Experience in carrying out protective measures and data on their efficiency (the Chernobyl and other accidents) as well as possible undesirable consequences of mass relocations.

-Other (ecological, social) factors affecting public health.

INITIAL PREMISES

Protective measures made it possible essentially to reduce the population exposures in 1986-1990(**). But, in the first weeks after the initiation of the accident, some measures were not taken soon enough nor to the full extent. As a result, according to incomplete data, tens of thousands of people received thyroid doses above 0.3 Sv (30 rem); for a considerable part of them, mainly children, these doses exceeded 2 Sv (200 rem). Some population groups, especially disaster workers including military servicemen who worked during the initial emergency measures, received external and internal radiation doses exceeding the prescribed emergency limit.

This part of the population and the disaster workers who received radiation doses above the permissible limits belong to the high risk groups.

Socio-psychological factors (stress, state of fear or anxiety) have taken on great importance alongside the radiation exposure. This is a post-accident syndrome typical in any extreme situation, but intensified by incomplete or misrepresented public information about the real situation, inadequate decisions on protective measures, and their untimely execution.

Given the implementation of the State Union-Republic program of urgent measures for 1990-1992 and the republican programs for elimination of the consequences of the accident, as well as the effectiveness of measures to reduce doses in the population and to project the level of doses for the future, then it is possible, taking account of the criteria recommended by international bodies, to avoid mandatory mass relocations.

(**) In 1989 in the zones of strict control the mean internal doses were equal to 0.3-0.6 mSv (30-60 mrem), averaging 15-30% of the external dose.

Neither the impact of the Chernobyl accident on public health nor protective actions can be considered without taking into account other risk factors of natural and technogenic nature (chemical pollution of the environment, endemic biogeochemical features of regions, radioactive contamination from natural and technogenic sources, etc.).

The implementation of measures aiming at reducing the radiation exposure must simultaneously have for an objective the relaxation of socio-psychological tension and stresses.

THE CONCEPT: BASIC PRINCIPLES AND CRITERIA.

1. A person who lives in a contaminated territory or lived there longer than a prescribed minimum period shall have a right to legally determined compensation through the systems of social security and health services, as well as privileges, reimbursement and guarantees.

2. The exposure dose produced by radioactivity due to the accident at the Chernobyl NPP shall be the basic index for making decisions about the necessity of taking protective measures, their character and scale, as well as compensating for damages.

3. As stipulated in the State Union-Republic program of urgent measures for 1990-1992, mandatory relocation will be completed according to the approved list, which has been based on prescribed intervention levels and socio-economic conditions.

4. The permissible excess (over the natural and technogenic radiation background for a given locality) of the population exposure from the Chernobyl fallout is determined by an average annual effective dose equivalent of 1 mSv (0.1 rem) for 1991 and following years.

At the level of 1mSv (0.1 rem) and lower, the conditions of living and labour activity of the population do not require any restrictions. Sanitary and hygienic measures commonly accepted in the USSR for uncontaminated territories shall be taken.

5. At a higher level than 1mSv (0.1 rem) per year (over the natural and technogenic background), protective actions (countermeasures) should be taken as follows:

-if necessary, radiation monitoring of the environment and foodstuffs;

-decontamination and other measures for reducing the radioactive contamination of air, water, and soil;

-agricultural measures for reducing the radionuclide content in products;

-reduction of radiation exposure in X-ray diagnosis, etc.

This complex of protective measures should be aimed at the continuous reduction of radiation exposure and of the level of contamination of foodstuffs, while simultaneously weakening those restrictions which upset the usual way of life and vital functions. Achievement of these goals should be optimized with the condition that an average individual effective dose equivalent does not exceed 5mSv (0.5 rem) in 1991, with a maximum possible decrease of this limiting level up to 1mSv (0.1 rem) in future.

To stimulate and control the implementation of protective measures, the republican bodies must annually establish specific local reference levels with allowance for the level attained and the possibilities for lowering it further.

It is necessary to introduce unified procedures to determine unambiguously the intervention levels (1 mSv, ...5 mSv).

6. Besides radiation protection, the countermeasures must involve:

-improved health service, including specialized control of the high-risk groups;

-provision of a balanced diet including micro-elements, vitamins and other additives, sanatorium and resort treatment and recreation;

-measures for reduction of socio-psychological tensions, anxieties, and maladaptation (psychological consultations, regular dissemination of scientifically assessed information, organization of free economic development regions, etc.);

-socio-economic measures (compensations, privileges, guarantees, etc.)

The significance of each factor and its relative weight must be assessed on the basis of the principles of cost/benefit optimization in order to achieve the maximum effect from investments in protection of public health.

7. Voluntary relocation can be reckoned among the countermeasures. Each person living in a contaminated territory shall have the right to make his/her own decision about continuing to live in the given territory or going to another place of residence, on the basis of unbiased information about the radiation situation, exposure doses, and possible consequences on health, medical, socio-economic and other aspects of life. The system of socio-economic measures should not give either choice a direct economic advantage.

The relocation conditions (priority order, degree of compensation, etc.) can depend on radiation burden and other factors (ecological, social, medical, etc.). Drawing up and implementing the corresponding plans are under the jurisdiction of Union and Republican governments.

It is necessary to take into account that the social-psychological consequences of the relocation itself could be more harmful for health than the radiation factor.

8. For the population who have received significant radiation doses after the Chernobyl accident it is necessary to launch a complex of measures for special regular health examination, health recovery, and prophylaxis. Children with affected thyroid require particular attention.

For these purposes, the State Register should be used; its reliable functioning at every level - from the regional to the union one, should be ensured; and, control over the objectivity of morbidity records should be enhanced.

9. It is necessary to draft and adopt legislative acts aimed at protecting the rights and health of citizens who are exposed to the range of the effect of unfavorable factors arising due to an accident as well as citizens who functioned as disaster workers at the Chernobyl NPP site.

10. It is necessary to continue fundamental and applied research on radiation medicine, radiation genetics, radiobiology as well as on the socio-economic and psychological aspects connected with the problems of the Chernobyl accident's impact on public health.