Informative DOSSIER about PROFESSOR VASILY BORISOVICH NESTERENKO, HIS "INSTITUTE OF RADIATION SAFETY, -BELRAD-" and situation in Chernobyl regions.

(photo: Forum in Córdoba, Spain, in November 2006. Professor Nesterenko and Anna Petrovna, translator of local NGO: "ANIDA").

One of BELRAD´s ambulances, donated by the Irish NGO which appears in the vehicle.

First of all, different links to can see videos and photos about Institute BELRAD and situation due to Chernobyl. Certainly, the videos are not in English, but the images are enough understandable. If you read text down displayed you will understand better, of course

http://video.google.fr/videoplay?docid=4953954349401334273 informative video of BELRAD to show in schools, etc. about the problems with radiation.
http://video.google.fr/videoplay?docid=-2616255795729479561 Video of Tv from Murcia, Spain about the institutional visit of Hall Town of city of Lorca, (Murcia, Spain) in order to presence the works and needs of BELRAD to collaborate.
http://video.google.fr/videoplay?docid=-6961646257469433495 report of Germany Tv about genius Professor Nesterenko and his excellent work with his Institute BELRAD.
http://video.google.es/videoplay?docid=-5384001427276447319&q=the+battle+of+chernobyl&ei=CDBYSMuZO4-SigLjz5iDDw Interesting video (IN ENGLISH) about Chernobyl catastrophe. Appears the principal personages explaining the facts. Very interesting the explanation about the plan of Nesterenko to avoid the 2nd apocalyptic explosion which would convert Europe and more regions in inhabitable territory. Thanks to this plan and thousands and thousands of "liquidators" Europe continues with live.
http://video.google.fr/videoplay?docid=-7226998026372687947 Video sobre Chernobyl and situation in Spain with his NPP.
http://video.google.fr/videoplay?docid=7260760682657761524 Conference of Prof. In Córdoba, Spain. Part I
http://video.google.fr/videoplay?docid=-5108015828715132487 Conference, part II of same speech.
http://video.google.fr/videoplay?docid=5023904481649373811 Conference, part III of speech.
http://video.google.fr/videoplay?docid=629936202494732439 Interview to assistants of Professor when they came to Spain with the children.
http://picasaweb.google.es/abaeche2/ChernobylBELRADNesterenko02 Collection of photos (more than the showed ones in this document) about BELRAD and hospitals. We always will try enlarging the collection. We wait also for other photos and videos of other European NGO that also collaborates with BELRAD.
-------- other complementary videos about Chernobyl : ----------
a) www.youtube.com/watch?v=pjo43Tk4318&NR=1 a) y b) Very good videos of Elena Filatova about
b) www.youtube.com/watch?v=_B9RD2A21-4&feature=related catastrophe days. Impressive music created for this case.
www.youtube.com/watch?v=6HPddRn-Sn8&feature=related First aerial images from helicopter flying over nuclear plant.
www.youtube.com/watch?v=nbCcutzXzYg&feature=related Vídeo about the heroically Works of "liquidators", avoiding the 2nd explosion. (2nd explosion besides would generate explosion of nearest reactors in Chernobyl). Thanks to them, Europe is habitable now. Shows the impressive image of helicopter funded as butter due to radiation.
www.youtube.com/watch?v=DOG2sW4I7RI&feature=related Very good representative video about Welcome to Chernobyl children invited in Sevilla (Spain). in 2007 ***(is possible needs + time to charge the video, but is OK)***

(Photo: Professor Nesterenko and Mr. Anatoly Karpov, ex Champion Chessplayer. Both Of them CO-FUNDERS OF INSTITUTE BELRAD. Since years, Mr. Karpov is Senator In Russia. Without the PERSONAL ECONO-MIC AID OF Mr. KARPOV AND NOBEL PRIZE ALEXANDER SHAJAROV BELRAD COULD NOT HAVE BE FOUNDED AND CONTINUE.
ONE BRILLIANT EXAMPLE FOR ALL US, Mr. KARPOV. THANK YOU VERY MUCH.

ATTENTION: IN CASE SOME IMAGES COULD BE MOVED, YOU CAN CHARGE THE ORIGINAL ARCHIVE CLICKING "DOWNLOAD".

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It contains representative photos along the whole document.

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№ Б1-146
от 14.03.2006

NESTERENKO Vasily Borisovich

He was born on December 02, 1934 in the village of Krasny Kut of Lugansk region (Ukraine)

In 1958 he was graduated from the N.E. Bauman Moscow Higher Technical School (today – Moscow State Technical University).

Corresponding Member of the Academy of Sciences of Belarus from 1972, Doctor of Technical Sciences (1968), professor (1969), Honoured worker of science and techniques of the BSSR (1979), Laureate of the State Price of the BSSR (1986).

The **author of more than 300 scientific works including 15 monographs, over 320 inventions**.

Professional activities

1958-1962 – **scientific assistant of the Institute for Engines of the Academy of Sciences of the USSR**.

1963-1965 – **head of the laboratory of the department for nuclear energetic of the Institute for heat-mass exchange of the Academy of Sciences of the USSR**. **Since 1965 the head of the department for nuclear power plants and the deputy scientific director.**

1977-1987 – **director of the Institute for Nuclear Energy of the Academy of Sciences of the BSSR (Belarus in USSR)**.

1971-1987 – **Chief designer of the mobile nuclear power plant "Pamir" for director of the Institute for Nuclear Energy of the Academy of Sciences of the BSSR. There were developed two pre-production models of the NPP "Pamir", one of them was successfully tested during 3800 hours. After the accident at the Chernobyl NPP the further tests of the mobile NPP "Pamir" in forces were stopped**.

He took part in liquidation of the consequences of the accident at the Chernobyl NPP beginning with May 01, 1986, direct at the Chernobyl NPP. He has a certificate of the participant of the liquidation of the accident at the Chernobyl NPP in 1986 and 1987 (clause 18, disablement).

1987-1990 – **head of the laboratory for radiation safety of the Institute for Nuclear Energy of the Academy of Sciences of the BSSR**.

Since 1990 – **director of the Non-governmental Institute of Radiation Safety "Belrad".**

Since 1996 – **chairman of the Council of Experts of the Higher Certifying Committee, since 2003 – member of the Council of Experts of the Higher Certifying Committee**.

Participation in the projects

1990-1994 –**Chairman of the United Committee of experts of Belarus, Ukraine and Russia, that work resulted in the expert conclusion "Chernobyl Accident: Reasons and Consequences**" in 4 volumes (800 pages).

1991-1995 – **Program "Radiation Monitoring of Foodstuffs of People after the Chernobyl Accident".**

In 1996 he received a grant of the J&C MacArthur Foundation (project "Radiation Monitoring of Foodstuffs of People in the Regions of Belarus Affected as a Result of the Accident at the Chernobyl NPP").

Establishment of the net of local centres for radiation control in villages in the regions affected by the Chernobyl accident.

Development, implementation of departmental and state tests of the dosimeters-radiometers "Sosna" (there were produced 300 thousand devices) and the automated gamma-radiometers RUG-92 for the control of foodstuffs (there were produced 1000 thousand devices).

Creation of the data base of the results of measurements of radionuclide contents in foodstuffs (over 360 thousand measurements).

Construction of electronic digital maps on radiation contamination in foodstuffs, on radiation doses in people in the affected districts of Gomel, Brest and Mogilyov regions.

Establishment of the training centre for training radiometrists for local centres for radiation control of foodstuffs of people and for the training of teachers in the field "Basic Principles of Radiation Safety".

Since 1996 – the establishment of the mobile WBC (whole body counter) laboratories at the Institute "Belrad". There were created 7 such laboratories that towards 2005 allowed to make 270 thousand measurements of ^{137}Caesium radionuclides contents in inhabitants (first of all children) in the Chernobyl zone of Belarus.

1998-2002 – **leader of the project with the J&C MacArthur Foundation on radiation WBC monitoring of radionuclide contents in 60 thousand inhabitants of Chernobyl regions of Belarus, on creation of the measurement basis in mobile WBC laboratories.**

Since April 2000 – **organisation of the production of the pectin food additive "Vitapect" at the Institute "Belrad".**

1996-2004 – **organisation of pectin cures of children in the Chernobyl regions of Belarus 76 thousand children received pectin preparations (from the beginning – the Ukrainian "Yablopect" , starting from 2000 – "Vitapect").**

He is a leader of the international project "Highly Exposed Children of Belarus" implemented under the contract with the Research Centre Juelich (Germany) on measurements of radionuclide contents in children of the Chernobyl zone of Belarus and on implementation of pectin cures in order to decrease the radioactive contamination in children.

In 2003-2004 he was an expert on radiation protection of the International project CORE (Cooperation and Rehabilitation) – local, national and international initiative for rehabilitation of the living conditions in the territory of the Republic of Belarus contaminated as a result of the Chernobyl accident.

He is a participant of the international project SAGE "Radiation Protection of the Population of the European Countries in Case of Nuclear Accidents at NPPs" in association with the French Institute for Nuclear Investigations CEPN.

In 1996-2005 V.B. Nesterenko attracted the financial aids from foreign Chernobyl initiatives of Germany, France, Austria, Belgium, Ireland, Switzerland, Spain for the WBC monitoring of radionuclide contents in children in the Chernobyl regions of Belarus and their radiation protection by pectins. With the financial support of children from German and French schools local centres for radiation control of foodstuffs were established in 20 villages (schools) of Belarus. The international projects were implemented with more than 25 Chernobyl initiatives.

The fourfold intake of pectins by children and their one time recuperation in sanatoria and abroad permit to reduce the annual radiation dose in 2 to 4 times.

Within the last five years the groups of children with maximal radionuclide contents in the organism are sent by the Institute "Belrad" for recuperation in families of the Chernobyl initiatives in Austria, France and Germany.

Examples of his publications of the topic of Chernobyl:

Expert conclusion edited by of V.B. Nesterenko in 4 volumes. Minsk 1993 (in Russian), 1997 (in English).

Scales and consequences of the accident at the Chernobyl NPP for Belarus, Ukraine and Russia. Minsk 1996 (in Russian, German, English).

Chernobyl catastrophe: radiation protection of the population (in Russian and English). Minsk 1997, Mainz (Germany) 1998.

Recommendations for radiation protection measures of the population and their efficiency. Minsk 2001 (in Russian and German).

Radiation monitoring of inhabitants and their foodstuffs in the Chernobyl zone of Belarus. Quarterly information list No. 1-28, Minsk 1996-2005.

Report at the International conference "Medical Consequences of the Chernobyl Accident: Results of the 15-years Investigations", Kiev, June 2001. "**Radiation Protection Measures of the Population of Belarus after the Chernobyl Accident".**

Reports at the 4th International conference "Children of Chernobyl – Medical Effects and Social-Psychological Rehabilitation" , Kiev (Ukraine), June 2-6, 2003: "**Long-Term Studies of ^{137}Caesium Accumulation in Children in the Chernobyl Regions of Belarus and Efficiency of Radiation Protection measures" (in co-authorship); "State and Dynamics of Radiation Contamination of Foodstuffs of Children in the Chernobyl Zone of Belarus" (in co-authorship**).

The report at the International symposium "Health of Liquidators and Their Descendants" (Switzerland, Bern, November 12, 2005) "**Consequences of the Chernobyl Accident for Belarus and Urgency of their Long-Term Radiation Protection of the Population (especially children and liquidators**)".

Nesterenko V.B. & al. Reducing the 137Cs-load in the organism of Chernobyl children with apple-pectin. Swiss Medical Weekly 134: 24-27, 2004.

Nesterenko V.B. & al. Chronic Caesium (Cs-137) incorporation after Chernobyl and Cardiovascular Symptoms in Schoolchildren Preliminary Observations after Intake of Apple-Pectin. Swiss Medical Weekly 134: 725-729, 2004.

Bandazhevskaya G., Nesterenko V.B. & al. Relationship between Caesium (Cs-137) load, cardiovascular symptomes, and source of food in "Chernobyl" children - preliminary observations after intake of oral pectin (в сооавторстве). Swiss Medical Weekly 134 : 1037-1042, 2004.

P.Hill, M.Schläger, H.Dedviichs, R.Lennartz, R.Hille, V.B.Nesterenko, A.V.Nesterenko, V.I.Babenko. "**Evalution of the Current Radiation Burden of Children Living in Regions Contaminated by the Chernobyl Accident". IRPA-congress at Madrid in Spain, 2004**.

The joint report of the Institute of Radiation Safety "Belrad" and the Nuclear Research Centre "Juelich" (Germany) under the international project "Highly Exposed Children of Belarus" (4th stage), **"Efficiency of the Removal of 137Caesium Radionuclides from the Organisms of Children by the Pectin Preparation "Vitapect", Keeping and Stabilisation of the Balance of Vitally Importants Microelements (K, Zn, Fe, Cu) by It**". Minsk, Juelich 2004.

The reports at the International conference at the International Sakharov Ecological University "Actual Problems of Dosimetry" (Minsk, October 2005) "**Radiation Monitoring of Foodstuffs in Some Settlements of Belarus Located in the Forest Area (according to the results of measurements of local centres for radiation control)" and "Radiation WBC Monitoring of ^{137}Caesium Contents in Children of Chernobyl Regions of belarus and Necessity of their Long-Term Radiation Protection by Pectins" (in co-authorship)**.

Booklet under the project SAGE: V.Nesterenko, A.Nesterenko, J.Lochar & al. "Guidance on Practical Radiation Protection for People Living in Long-Term Contaminated Territories". Working document.

He became the International Peace Price 2005 in Germany (Bremen) for the activities in the field of radiation protection of Belarusian children.

(our note: in next page the speech of this price by Germany Senator who gives him the price)

EUROPEAN PARLIAMENT

bg es cs da de et el en fr it lv lt hu mt nl pl pt ro sk sl fi sv

Parliamentary questions

20 January 2003

E-0023/03

WRITTEN QUESTION by Yves Piétrasanta (Verts/ALE) , Marie Isler Béguin (Verts/ALE) , Renzo Imbeni (PSE) , Catherine Guy-Quint (PSE) , Harlem Désir (PSE) , Alonso Puerta (GUE/NGL) , Gérard Onesta (Verts/ALE) , Francis Wurtz (GUE/NGL) , Alejo Vidal-Quadras Roca (PPE-DE) , Charles Tannock (PPE-DE) , Daniel Cohn-Bendit (Verts/ALE) , Monica Frassoni (Verts/ALE) , Giuseppe Di Lello Finuoli (GUE/NGL) , Pedro Marset Campos (GUE/NGL) , Alexander de Roo (Verts/ALE) , Didier Rod (Verts/ALE) , Danielle Auroi (Verts/ALE) , Paul Lannoye (Verts/ALE) , Bart Staes (Verts/ALE) , Caroline Jackson (PPE-DE) , Struan Stevenson (PPE-DE) , Theodorus Bouwman (Verts/ALE) , Armando Cossutta (GUE/NGL) , Nuala Ahern (Verts/ALE) , Jan Wiersma (PSE) and Robert Goodwill (PPE-DE) to the Council

Original language of question: FR

OJ C 222 E, 18/09/2003 (p. 136).

Subject: EU aid and intervention for the victims of Chernobyl

The explosion at the Chernobyl nuclear power plant in 1986 was the most serious nuclear accident ever to have occurred in peacetime, leaving a terrifying and devastating radioactive legacy that will continue to be felt for many centuries to come, mainly in the European states of Ukraine and, above all, Belarus, countries already fragile as a result of undergoing abrupt economic, social and political transition.

As well as the great many victims directly affected by radiation among the local inhabitants and the 600.000"liquidators" who took part in the clean-up operation at the site of this tragedy of the industrial age, there are also those who have been forced to stay in the area or return there, due to economic constraints or political obscurantism.

Invisible but ever-present, caesium-137 and strontium-90, radionuclides with a half-life of around 30 years, have caused long-term damage to 5 % of Ukrainian and 23 % of Belarussian soil, reducing the local populations to a state of subsistence living. At present, the situation is characterised by pandemics of thyroid cancer, leukaemia, congenital deformities, and an unprecedented ecological genocide far outstripping any individual state's budgetary, sanitary and medical capacities, let alone those of successor states to the Soviet Union. The scientific community predicts that, in terms of ecological fallout in the ecosystem and pathological after-effects, the worst is yet to come for the "Chernobyl generations".

One scientist, Professor V. B. Nesterenko[1], director of the independent Belarusian Institute of Radiation Safety "Belrad", is conducting pioneering research into nuclear pathologies, devoting all his efforts and the meagre resources available to the Institute to developing medical follow-up and treatments for the people of the

affected region, in the face of the numerous difficulties and constraints prevalent in Belarus.

Confronted with this human drama and the challenge of reconciling needs with resources, does the Council recognise that the political situation in Belarus can under no circumstances justify a withdrawal or even a disengagement from the Union's duty to provide humanitarian and medical assistance for this European people, but rather that it calls for a redoubling of efforts and presence to help this martyred people and its independent medical personnel and scientists?

What recommendations does the Council intend to make to the Commission in support of the Belrad Institute and its director, Professor Nesterenko, following the guidelines set out by its previous president, Mr Aznar [(2)]?

Why will the Council not encourage the Commission to set up a programme of curative holidays for Belarussian, Ukrainian and Russian children within the EU's medical services and hospitals?

(1)http://www.fortunecity.com/boozers/vines/860/indexfr.htm. And belrad@nsys.by

(2)Il faut utiliser le programme TACIS afin de remédier aux conséquences de la tragédie de l'accident de Tchernobyl. Ces actions (TACIS) doivent être réalisées au travers de la société civile, étant donné que l'état actuel des relations bilatérales entre l'Union Européenne et le Bélarus ne permettent pas de réaliser des actions ou des programmes de Coopération avec le Gouvernement ou l'Administration biélorusses (30 avril 2002).

Others of BELRAD´s ambulances, donated by the same Irish NGO which appears in the vehicle.

www.dieschwelle.de/content/englisch/peace_award_2005/laudatien/wassili_nestorenko.html

die schwelle

Bremen Peace Prize 2005

from the **Threshold Foundation**, for exemplary commitment
to justice, peace and the integrity of creation.
- Category: Public action -

Laureate: Vasily Nesterenko, Minsk

L A U D A T I O N

At the centre of my short speech is the name NESTERENKO, but behind this is another name: CHERNOBYL.

Chernobyl is the name of the place in Ukraine where almost 20 years ago, on 26 April 1986, a core melt-down followed by several explosions took place during an experiment in block IV of the local nuclear power plant. Chernobyl has been world famous ever since and is synonymous with CATASTROPHE.

Vasily Nesterenko is the name of the Belarusian nuclear physicist working at this nuclear power plant – including the days immediately after the nuclear disaster, and who, since 1986, has been committed to fighting the environmental and health consequences of this catastrophe and nuclear power in general, despite political and official resistance.
This name is much less familiar to us – it is synonymous with MORAL COURAGE.

That is why I would first like to thank the Threshold foundation for awarding the Bremen Peace Prize 2005 in the category "public action" to Professor Vasily Nesterenko. **It is in recognition of extraordinary and exemplary commitment that fulfils the objectives of the Threshold foundation, namely "justice, peace and integrity of creation" in a very special way.**
By drawing public attention to Vasily Nesterenko's work, this award is more than just a personal accolade; it is also a huge political decision.

In a way it also serves to counter the awarding of this year's Nobel peace prize to the IAEA, the International Atomic Energy Agency, for promoting the peaceful use of nuclear power. The IAEA was formed back in 1956 as an independent UN organisation with the task of "allowing nuclear power to make a quicker and a more extensive contribution to peace, health and prosperity throughout the whole world." It is, however, also intended to ensure "that the help it provides is not used to promote military objectives."
In other words: an organisation founded in the nuclear energy euphoria of the 1950s – which is today a sort of lobby organisation for the nuclear industry – has received – despite Chernobyl – the Nobel Peace Prize. No doubt there were also tactical considerations due to the negotiations against the production of nuclear weapons in Iran, and maybe they even wanted to influence personnel decisions too, but awarding the Nobel Prize to the IAEA is just asking for trouble. Especially given the fact that this organisation has

been playing down the consequences of Chernobyl for years, publishing false figures about the number of victims and claims that this reactor explosion did not have any serious negative consequences for the population and that there was – quote – "no far reaching, radioactive contamination detected which would pose a serious threat to human health."

This brings us back to Professor Nesterenko, who has been addressing these consequences for human health. And that is why his name is at the centre today, and rightly so. And it is also why awarding the prize to him is both a very special honour and accolade, but also a significant political signal.

Who is Professor Nesterenko?

Borisovich, Vasily Nesterenko was born on 2 December 1934 in the Krasny Kut settlement in the Ukrainian region of Lugansk in the Soviet Union. He is now a citizen of Belarus and works in Minsk. He studied at the Moscow State Technical University, became a doctor of technical sciences in 1968 and a professor in 1969. His scientific works mainly dealt with atomic and radiation safety, on which he wrote several hundred scientific papers. From 1977 to 1987 he was director of the Institute of Atomic Energy at the Academy of Sciences in the Republic of Belarus in the USSR.

Your work, Professor Nesterenko, for which you are being honoured today with the Bremen Peace Prize began in 1987. To be more precise, it began as far back as 30/4/86 when, straight after the reactor accident your proposal to move all the children out of the southern regions and carry out an immediate iodine prophylaxis was rejected by politicians and the authorities.

Later on you described the day of the reactor accident as the decisive point in your life, saying: "Chernobyl wasn't just a disaster for the world; it was also my own personal disaster of a lifetime. I had lived for nuclear power, but it will always be too dangerous."

Right from the moment disaster struck in block IV, your concern was for the people. Together with your colleagues, you assessed the radioactive situation in as much detail as possible and produced maps showing the contamination of the territory in the surrounding regions.
Firstly you worked as head of the radiation safety laboratory, then as director of "Radiometer" – a newly formed "Centre for Radiation Safety", which became the non-governmental institute for radiation safety "Belrad" in 1992. Through these institutes you established an associative network of the local measuring bodies for checking the radioactivity of food in the population – at times there were 370 measuring bodies.

You weren't interested in scientific figures or statistics, but rather in protecting the people. You and your colleagues were not so much scientists as humanitarian helpers, talking to the locals in the affected villages, sharing knowledge and practical advice to protect them from or reduce exposure to radiation. For example, teachers were trained to measure the food in the area and discuss concrete suggestions with the people as to how they could reduce exposure to radiation, in particular caesium 137 and strontium 90, by preparing and processing food, on the basis of the results.

This shook the people out of their apathy, "There's nothing you can do anyway", "You can't see or feel radioactive rays", and taught them by providing with information and advice on what practical measures they could employ when preparing their food and how to select places for mushrooms and berries or for

growing vegetables, and thus protect themselves – and especially their children – from additional exposure to radiation. For some villages real "radiation maps" for the direct vicinity were created.

This meant that it was possible to provide information about particular exposure risks in certain seasons and regions or special protective measures. This humanitarian advisory work for radiation protection – which incidentally included video films and parents' books in schools – was only possible with the measuring bodies and measured results. There are still 85 of these measuring bodies in operation today, 25 of which are funded by Chernobyl and other initiatives from the West. And so at this point I would like to expressly commend the Huchting Bremen Chernobyl initiative and the Bremen Hermannsburg and Willakedamm schools that help perform this difficult task in partnership with Professor Nesterenko and schools in Belarus.

Of course Professor Nesterenko's work and the related criticism of the public bodies about their handling of the consequences of Chernobyl caused conflict with the authorities and politicians. An open letter to Gorbachev, which you wrote in 1989 together with 92 doctors, against the cover-up of the consequences of the Chernobyl catastrophe for the health of the people was just as controversial as your actual advisory work on the ground. The state measuring bodies with which you cooperated were taken away from you and for the most part closed. According to the state, the consequences of Chernobyl were completely exaggerated, the relocations were a mistake and specifying the health risks was sheer negativity. Harassment by the authorities was intended to hamper your work, two mysterious car accidents after public appearances suggest that there were attempts on your life. One of your colleagues, Prof. Yury Bandazhevsky – was defamed, then arrested on suspicion of corruption and sentenced to 8 years in a labour camp.
Despite criticism, harassment and threats you continued your work unperturbed and with great success. Perhaps the many international contacts you had established helped; perhaps even the many medals and honours you had received previously from the state as a deserved scientist.
What did help in any case was your belief in the objective of the task and the need to help the people. And you had and have what it takes for such a commitment, namely: moral courage.

You don't come across moral courage every day or everywhere. Normal human behaviour is assimilation and subordination, not just in authoritarian but also liberal systems. This is down to indifference. Moral courage begins when one doesn't just go with the flow, but instead intervenes and guides things, when one confronts a trend, just like you would reach into the spokes of a rolling wagon, in other words put up resistance. When you call a lie a lie and wrong wrong and advocate truth, justice, freedom and human dignity.
You have set an example for us through your actions, Professor Nesterenko.
The prize you are being awarded today is a small token of gratitude for your exemplary actions.

To **conclude I'd like to go back to a sentence from the quote of yours I mentioned earlier; you said back then: "I had lived for nuclear power, but it will always be too dangerous."**
This remark poses a question about our attitude today. It's good to praise Nesterenko, but it's not enough. We also have to ask ourselves what we are doing today.

Back then – after the reactor accident in Chernobyl on 26/4/1986, the people here were also shocked and concerned as the wind carried the radioactive cloud and it rained down over large parts of Europe. **At that**

time I was the senator for health in the senate and arranged for food to be examined, particularly for caesium 137 and iodine 131. The limit values had been far exceeded. We issued warnings against eating certain types of vegetable and milk products, examined sports fields and replaced sandpits. We also tried to change the causes to some extent and decided in the senate to phase out nuclear power and thus set the wheels in motion.
Much of this has already been forgotten and shelved as the risk decreased in subsequent years.

But, despite everything, things are now radically different – even if the wind hasn't yet fully changed direction. Germany's continued phasing out of nuclear power would not have been possible without Chernobyl and the sensitivity of the people. And something else has changed since then: the development of alternative energies is so advanced that our energy requirements can be met by renewable sources of energy in the foreseeable future. **The solar age has already dawned. The concrete proposals and demands for the energy turnaround are on the table; it's up to the political will to implement them. We can do without the risks of radioactive radiation – be it through accidents such as Chernobyl, through recycling the fuel rods or through the final disposal; the world is safer and people are healthier without nuclear power.**

This trend towards an energy turnaround was possible thanks to the commitment of many citizens, initiatives and organisations all over the word; today Vasily Nesterenko stands at the centre of this and is honoured with the Bremen Peace Prize of the Threshold foundation.

So thank you, Professor Nesterenko, for your tireless work, for your fearless commitment to the people after the Chernobyl disaster. Your actions are exemplary; you are an example to us.

The most effective way of expressing our thanks and appreciation to you would be to emulate you and follow your example. Thank you and congratulations.

Bremen, 25/11/2005
---------- Herbert Brückner ----------

(images from report in German Tv. The link of this report is in the first page)

Cooking with firewood (contaminated too), converts to chimney in "mini nuclear reactors".

Explaining to farmers about risks.

Testing radiation to children in ambulance, in schools, etc.

http://home.nvg.org/~praxiz/cc/letter.html

"This is a letter of information from professor Vasili Nesterenko, leader of the Institute of Radiation Safety in Minsk. He wrote this letter to the prime minister of Norway, and some other ministers of the government of Norway, in a sort of desperate cry for help.

Hundreds of children in Belarus are now in great danger of developing cancer and other serious illnesses because of the food they eat, which is still very contaminated. Please read this letter, it will give you a lot of information which I'm sure was unknown to you some minutes ago."
- Svanhild

THE REPUBLIC OF BELARUS

Institute of Radiation Safety
BELRAD

To Whom It May Concern

Information about the radiationproblem in Belarus - 1998.

We would like you to consider the following information, which we need to present you. As a result of Chernobyl's catastrophe, 23% of Belarus' territories were contaminated with radioactive substances, which are extremely dangerous for people's health. Those were radionuclides of caseium, strontium and plutonium. While at the pointed areas there live about 2 million people, 500.000 of which are children, in 3221 aggregations. And the fact that about 80% of radioactive dozes people get from food, is a characteristic of the areas. The level of food contamination with radionuclides exceed any possible acceptable level.

According to the data from the independent local centers of radiation control and from the state sanitation services, about 25% of the locally produced goods and food is contaminated with caesium-137 in the territories, which suffered from Chernobyl catastrophe. The level of contamination exceeds all republican accepted levels.

According to the data from Belarus' Ministry of Health, in 1997 there were discovered 567 localities, where milk was contaminated with caesium-137, which exceeded all accepted levels. There were also registered 47 areas, where milk was contaminated with strontium-90, which exceeded all accepted levels as well.

High percentage of radionuclides in food causes accumulation of considerable amounts of radioactivity in the organism of children and grown-ups. That is proved by the research, made by our Institute. We have at our disposal two portable laboratories with the spectrometers of men irradiation (SMI), with the help of which the Institute examined 8,000 children from Chernobyl zone over the past 2 years.

Most children have the level of accumulated radioactivity in their organism, making up 600-800 becquerel per kg.

High amounts of the accumulated radioactivity in children's organism make them weaker and extremely exposed to the diseases. Very often radioactivity itself becomes a straight reason for children's illnesses.

According to the figures of Professor Yuri I. Bandajevsky at the accumulation of caeisum-137 in children's organism 30-50 becquerel per kg of the organism suffers pathological pertubations of the essential organs (heart, kidneys, liver etc.).

For instance, according to the latest data, the level of malignant oncologic diseases among children from Brest region (Stolin and Luninetsk districts) is almost twice as high as the average level in the region. There the frequency of chronic gastritis is 2-3 times as high as in

the most of the more clean areas. The sickness rate of thyroid gland, lymphatic and hemoplastic in those districts is 3-5 times as high as the average in the region.

With respect to what is mentioned above, the problem of health care and safty of more than 500, 000 children, who live in the contaminated areas, is obviously sharp nowadays.

The problem could be partly decided by providing those children with clean food. But, unfortunately, the difficult economic situation in Belarus does not let to do that. The regular treatment of the children at the clean areas is hardly possible either.

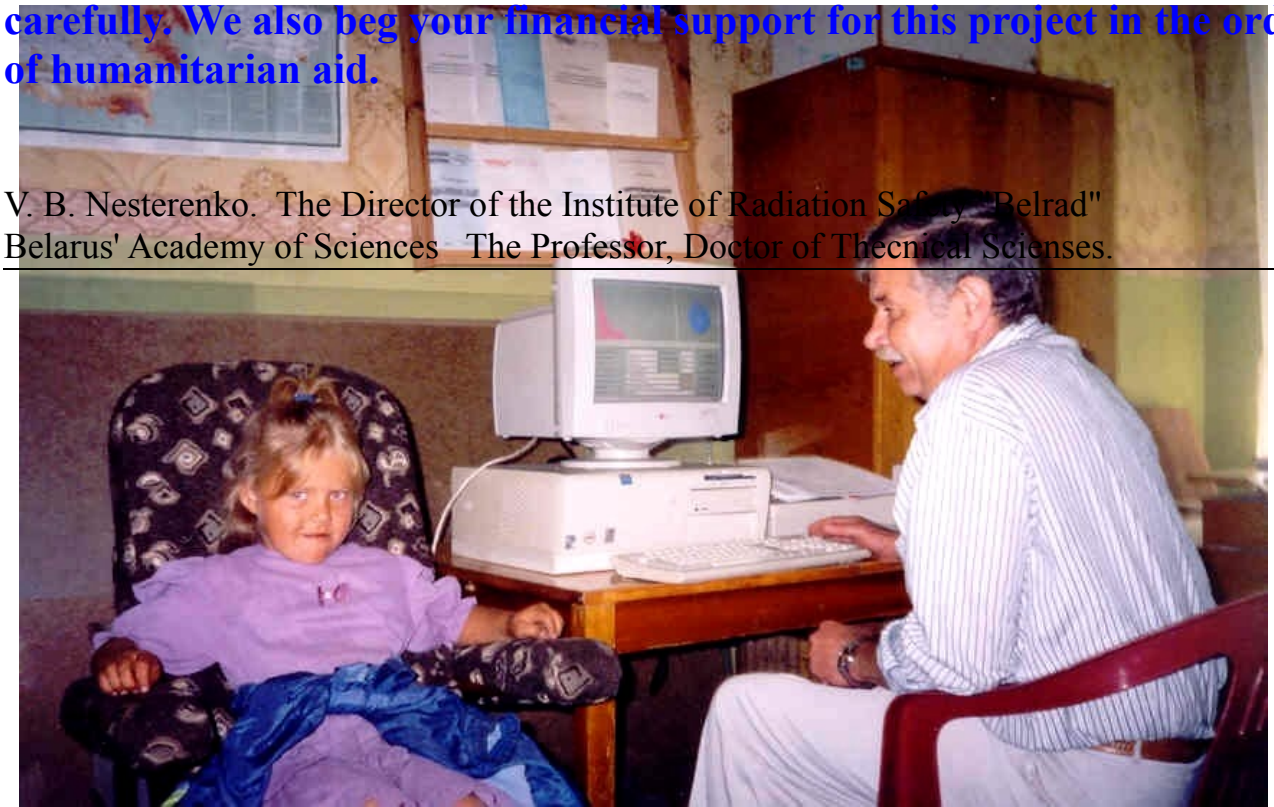
Having the same meals with grown-ups, children get 3-5 times bigger dozes of radioactivity.

Considering all this, the more easy and accessible way of treating children is arranging a large-scale and regular examinations of the children with the help of SMI and also by providing them with pectin medicines, which are able to string radionuclides and to let them rather easily go out of the organism. The effectiveness of pectin medicines (for instance, "Yablopect") is proved by the researches, carried out at our institute, when the levels of accumulation of radionuclides in children's organism were carefully measured by SMI before and after taking pectin medicines. Their effectiveness is also approved by Belarus' Ministry of Health, and there is a license of using them.

The large-scale researches with SMI, made by our Institute, showed that one course of taking "Yablopect" (60 tablets, during a month) lowers the accumulation of radionuclides in children organism by 30-50%.

Taking into account the recieved results, the Institute of Radiation Safety "Belrad" has prepared the project "Radiation monotoring of the children from Belarus" regions suffered from Chernobyl catastrophe, and providing them with ratiation safety by using pectin medicines".

We present you this project, and we would like you to examine it carefully. We also beg your financial support for this project in the order of humanitarian aid.



V. B. Nesterenko. The Director of the Institute of Radiation Safety "Belrad"
Belarus' Academy of Sciences The Professor, Doctor of Thecnical Scienses.

(photos: Measuring of children in the villages and Vitapect distribution)

Will people come back to live in post-Chernobyl areas?

Vis-a-Vis: Valentin Kruchkov, head of the Commission for Chernobyl accident problems, environment and ecology of the House of Representatives of the National Assembly of the Republic of Belarus, and Vasily Nesterenko, director of Belrad Institute of Radiation Security.

The issue of contaminated areas after the Chernobyl accident has recently received a frequent coverage in the state-run mass media in such a way that it arises certain apprehensions. It is well-known that during his visit to the Gomel oblast President A. Lukashenko announced that one may cultivate potatoes on this land. Half a year later, the natives of this area "suddenly" confessed that they would like to come back to their native places. After that, scientists started to discuss the subject of minimisation of the adverse effects of radiation. Some local leaders are calling upon "making some decision on whether to relocate people from contaminated areas or not...".

There have been no official modifications to the legislation that stipulates the possible relocation of people from contaminated areas. The two laws that constitute the legal basis for social protection of the population and the reimbursement for the damage inflicted upon their health, - "On the Social Protection of Victims of the Chernobyl Accident" and "On the Legal Regime of Radioactively Contaminated Areas Resulting from the Chernobyl Accident". So what's the reason of this upsurge of attention to this issue? Has the republic leadership decided to repatriate the native population to areas affected by the Chernobyl accident and to restore the ruined infrastructure? How great is the probability of this scenario? What could be the consequences of the implementation of such a resolution? And if it is to become a reality, does it have a proper design and research backup? VIS-A-VIS participants, - Valentin Kruchkov, head of the Commission for Chernobyl accident problems, environment and ecology of the House of Representatives of the National Assembly of the Republic of Belarus, and Vasily Nesterenko, director of Belrad institute of radiation security are discussing it.

Vasily Nesterenko: this would lead to disastrous consequences.

Vasily Nesterenko. Born in 1934 in Krasny Kut (Ukraine). Graduated from the Moscow Bauman Technology University in 1958. In 1963 maintained a Candidate's thesis; in 1968 - a Doctor's thesis; since 1969 - Professor; since 1972- a Correspondent - Member of the Academy of Sciences. In 1977-1987 - director of the Nuclear Energy Institute of the Belarusian Academy of Sciences. He has over 300 research publications on nuclear energy and radiation security. Since 1990 head of the Belrad Independent Belarusian Institute of Radiation Security.

- A considerable portion of the Chernobyl-affected areas is contaminated not only with strontium but with plutonium as well. I think that after the Chernobyl nuclear accident about 100 kg of this highly toxic element which is hazardous for human lungs and respiratory system were released into the atmosphere. The period for

its semi-decay exceeds 24 thousand years, - that is, plutonium is actually an eternal element. **It is dispersed, primarily, in the vicinity of the nuclear accident area, in the prohibited zone and in those villages from where people are being relocated. A lot of people are unaware of the danger they are subject to while living in contaminated areas. Of course, you could understand them, - they want to come back to their native places. Human beings have no organs of perception of radiation. That is why, it seems to some people that a lot of time has passed since the accident took place, the same trees grow and the same rivers flow in the contaminated areas. The task of scientists is to explain that it is far from that. Personally, I am convinced that if we move the people back there, this will bring them nothing but trouble.**

Local leaders often complain that no adequate efforts are taken to reclaim lands for farm use. However, this procedure is carried out in accordance with a legally established order. It is necessary to conduct preliminary investigation of lands with respect to caesium, strontium and plutonium contents, to compare the obtained results with maximum permissible doses and, what is most essential, to draw conclusion, whether it is possible to obtain safe products there. I cannot fully exclude the possibility of obtaining safe products in the Chernobyl-affected areas, but what investment this would require! In the long run, living of people in such areas will cost the state a few times more than their living in environmentally safe areas. During his visit to the contaminated areas the President noted that to his mind, in some areas it is possible to grow potatoes. Suppose, given the appropriate technology, you could cultivate potatoes that would meet safety standards. What about the rest? The people, if they are moved back to the contaminated areas, will collect wild berries, mushrooms; they will cultivate not only potatoes, drink water, go along the roads. And all this is contaminated, hazardous. Radiation will accumulate in their organisms and sooner or later, they will get sick, so they will need doctors who will also be sent to contaminated areas; further on, construction workers will be sent, teachers will be wanted...

I don't see any perspective in repatriating people to such areas, particularly today, when there are affected areas where the relocation of people has not been completed, where people live, where foodstuffs are produced; their level of contamination 10 -15 times exceeds the maximum permissible standards. In my opinion, money should be invested into the solution of this particular problem, that includes comprehensive pasture design technologies, production of special mixed feed for animals which contains adsorbents. The initiative to move the people back to the villages from where they were previously relocated, which requires enormous resources, seems to be absolutely illogical; obviously, its aspects obviously have not been thoroughly studied. By the way, such a study requires less investment. My point of view is that we cannot provide safe living conditions for the people that are to be repatriated to the affected areas. At present, the state has no resources for such programs.

The consequences of people's return to contaminated territories are extremely dangerous. Twelve years after the Chernobyl accident 80-90 per cent of the radiation exposure the people obtain through food. According to the medical research carried out by the Gomel Medical Institute, pathologies of internal organs develop at the level of accumulation of caesium-137 approximately 50 Bq/kg. Even within the radiologic monitoring zone with the radiation level of 1-5 curies there are

registered cases when a litre of milk contains 200 Bq ,while a child's organism contains 100-200 Bq per one kg of body weight. This area is considered to be relatively safe. However, according to estimates made by our Institute, 1.5 million people who live there can accumulate 60 per cent of the total collective dose of exposure. I would like to point out that radiation accumulates very quickly in human organism. If we consider the results obtained during an examination of inhabitants of the affected areas and compare them with data obtained from an examination of students from safe areas, who came to study in Gomel, we'll see that in a few months, radiation exposure doses become practically equal. After eating some tasty fish an organism will need a year to dispose of the radiation. And all this time radiation will be constantly ruining internal organs. Now think what consequences might be for people who will return to the contaminated areas.

The state will hardly reclaim lands for farm use in contaminated areas. I would like to hope that those citizens of the country who have any access to the environmental information will block any actions taken by authorities in this direction. From my point of view, the Belarusian leadership has a desire to eliminate the consequences of this disaster, although, I believe it would be more appropriate to display more initiatives in some respects. Belarus will never overcome the Chernobyl accident effects if using only its own potential, - the damage caused by the accident measures $270 billion, more than 38 national budgets. However, instead of attracting attention of the world community to the Chernobyl problem, we tend, for some reason, to underestimate the scope of accident consequences. This is harmful and unreasonable, like the behaviour of the former USSR government in April-May 1986.

BG Note: In the result of the Chernobyl accident 23 per cent of the Belarusian territory is contaminated with caesium-137. Over 130,000 people were relocated from the contaminated areas that had a contamination degree of 30-40 Ci. The population of the areas having contamination degree of caesium-137 over 37 Bq amounts to 2,105,400 people. (i.e. every fifth inhabitant of Belarus lives in contaminated area). **Within the post-accident period the rate of thyroid cancer cases with children has gone up 50 times and 1.8 times with adults**. The spread of gastritis and gastroduodenitis has increased by 171-296 per cent.

Responsible of Paediatric Cancer Hospital, Professor Nesterenko and Olga (middle), responsible of bureaucratic affairs of BELRAD.)

(Photo: Explanation to children in the villages on precautions about radiation and the necessary Vitapect to decrease the accumulated levels of radiation.)

FROM excellent BOOK: "VOICES FROM CHERNOBYL, CHRONICLE OF THE FUTURE", By Svetlana Alexievich

(Courtesy of author Svetlana)

Translated by Antonina W . Bouis AURUM PRESS
(available in www.amazon.com : we recommend you this IMPRESSIVE book)
http://alexievich.info/booksEN.html#4 (Web of Svetlana) The first edition was "The Chernobyl prayer"
First published in Great Britain 1999 by Aurum Press Limited
25 Bedford Avenue, London WC1B 3AT
This book was first published as Tchernobylskai'u molitva by
Editions Ostojie, Moscow, 1997

Testimony of Profesor VASILY NESTERENKO about the days of Chernobyl catastrophe.

A MONOLOGUE ABOUT THE IMMEASURABLE POWER OF ONE MAN OVER ANOTHER

I'm not a liberal arts person. I'm a physicist. Therefore I want facts, only facts.
They'll have to answer for Chernobyl some day. The time will come to answer, the way they did for 1937, the Stalinist terror. Even if it's fifty years later. Even if they're old. Even if they're dead. They're criminals![Pauses.] We have to preserve the facts. The facts. They'll be needed.
That day, 26 April, I was in Moscow. On a business trip. And I learned about the accident then.

I called Slyunkov, the first secretary of the central committee of Belarussia in Minsk. I called, once, twice, three times, but they wouldn't put me through. I found his assistant (who knew me well). "I'm calling from Moscow. Connect me with Slyunkov. I have urgent information for him. About an accident!" I was calling on a government line, but everything was classified already.
As soon as I started talking about the accident, they disconnected me.
They were listening in, naturally. You know who I mean. The appropriate bodies. And even the fact that I, the director of the Institute of Nuclear Energy of the Academy of Sciences of Belarussia, associate member of the Scientific Academy, wanted to speak to the first secretary of the central committee, didn't change anything. It was classified for me, too.
It took me two hours to get through to Slyunkov. I reported: "It's a serious accident. According to my calculations (I had already spoken with a few people in Moscow), the radioactive cloud is moving towards us.
Towards Belarussia. We must immediately give prophylactic iodine treatment to the population and move out everyone living close to the station.
People and animals within 100 kilometres have to be moved away." "I've already had a report," Slyunkov said. "that there was a fire there, and it's been put out." I burst out: "That's a lie! Deceit! Any physicist will tell you that graphite burns at a rate of five tons an hour. Just imagine how long it will burn!" I took the first train to Minsk. A sleepless night. I got home in the

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morning. I measured my son's thyroid - 100 microroentgen an hour! The thyroid is a reliable indicator. We needed potassium iodide. Ordinary iodine. Two or three drops in a glass of water for children and three or four drops for adults. The reactor would burn for ten days, so it was necessary to take iodine for ten days. But no one listened to us! To scientists, doctors. Science was dragged into politics, medicine was dragged into politics. And how! Do not forget what the mentality was then, what we were like then, ten years ago. The KGB was at work. "Western voices," that is, foreign radio broadcasts, were jammed. There were thousands of taboos, Party and military secrets. Besides which, we were all brought up with the idea that the. peaceful Soviet atom was as safe as peat or coal. We were people hemmed in by fear and prejudice. The superstition of faith.
But I want facts, only facts.
That same day, 27 April, I decided to go to the Gomel Region which borders on the Ukraine. From the regional cities of Bragin, Khoiniki and Narovlya, it's only a few dozen kilometres to the station. I needed complete information. I took equipment to measure the background radiation levels. And here's what it was: in Bragin, the level was 30,000 microroentgens an hour, in Narovlya, 28,000. People were sowing and ploughing.
Getting ready for Easter. Painting eggs, baking cakes. What radiation? What's that? There have been no orders. The authorities are merely demanding reports on the sowing, the rate. They looked at me as if I were crazy. "What are you talking about, professor?" Roentgens, microroentgens. Extraterrestrial language.
I went back to Minsk. Out on the boulevard people were selling meat pies, ice-cream, hamburgers, bread. Under a radioactive cloud.
It was 29 April. I remember it exactly. At eight in the morning I was in Slyunkov's waiting-room. I kept trying to get in. They wouldn't see me. I stayed until 5.30 that evening. At 5.30 one of our well-known poets came out of Slyunkov's office. I know him. He told me, "Comrade Slyunkov and I were discussing the problem of Belarussian culture." "Soon there won't be anyone to left to develop that culture!" I exploded. "Or to read your books, if we don't move people away from Chernobyl now. If we don't save them!" "What are you talking about? I heard that the fire has been put out now." I finally broke through into Slyunkov's office. I described to him what I had seen the day before. We have to save people! In the Ukraine (I had called there) they had begun evacuating.

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"Why are your people [from my institute] running around town with Geiger counters, sowing panic! I consulted with Moscow, with the academician Ilyin. Everything is fine here. And the government commission is at work. And the procurator's office. They've sent in the army and military technology.

"Our land was already covered by thousands of tons of cesium, iodine, lead, zirconium, cadmium, beryllium, boron, an unknown quantity of plutonium (the uranium-graphite reactors of the Chernobyl type developed weapons-grade plutonium to make atom bombs) -- in all, 450 types of radionucleides. The amount was equal to 350 bombs of the kind dropped on Hiroshima. We were supposed to be talking about physics. The laws of physics. But we talked about enemies. We were looking for enemies.

Sooner or later, someone will have to answer for that.

"You will have to justify yourself," I told Slyunkov. "You will say that you are only a tractor builder [he is the former director of a tractor factory] and that you knew nothing about radiation. But I'm a physicist and I have an idea of the consequences. "But what was this? How could some professor, some physicist dare to teach the central committee anything? They weren't a gang of bandits. It was more like a conspiracy of ignorance and bureaucracy. The principles of their life and their bureaucratic training was: don't rock the boat.

Slyunkov was about to be sent to Moscow on promotion. I think he had a phone call from the Kremlin. From Gorbachev. Something about not starting a panic in Belarussia, the west was making too much of it already.

And the rules of the game were that if you did not please the authorities above you, you would not be promoted, you wouldn't get the vacation you wanted or the dacha you wanted. If we were still a closed system behind the iron curtain, people would still be living right next to the station. They would have kept it all top secret. Just remember the secret testing that took place in Semipalatinsk.* A Stalinist country. It's still a Stalinist country.

The instructions as to what to do in case of nuclear war recommend preventive iodine treatment for the whole population in case of a threat of nuclear accident or nuclear attack. A threat. And here it was 3000 micro-roentgens an hour. They were not worried about people but about their power. We live in a country of power and not of people. There is no question that the state takes precedence. And the value of human life is zero.

***Semipalatinsk in Kazakhstan was a test-station for Soviet nuclear and thermonuclear bombs.- Ed.**

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They could nevertheless have found ways of acting. Without announcements, without panic. Just add iodine to the water supply, add it to the milk. So, people would have noticed that the water tasted funny, the milk tasted wrong. They had 700 kilograms of iodine in warehouses in the city.

And that's where they stayed. People were more afraid of anger from above than of the atom. Everyone was waiting for a phone call, an order, but no one undertook anything himself. I carried a Geiger counter in my briefcase. Why? They wouldn't let me into offices, they were sick of me. I took my Geiger counter with me and placed it against the thyroid of the secretaries and the personnel in the waiting-room. That scared them and sometimes they would let me in.

"Why are you creating hysteria, professor? Are you the only one concerned about the Belarussian people? Everyone has to die of something: smoking, car crash, suicide." They laughed at the Ukrainians who were on their knees at the Kremlin, begging for money, medicine, Geiger counters (there weren't enough), but our leader (Slyunkov) gave a summary report in fifteen minutes. "Everything is fine. We are managing with our own resources." He was praised. "Good work, brother Belarussians!" How many lives did that praise cost? I have information that the authorities themselves took iodine. When our institute examined them, they all had clean thyroid glands. That is impossible without iodine. They got their own kids out quietly. And when they went on business trips to the sites, they had respirators and special clothing. Everything that no one else had. And it's

no secret that they had a special herd of cows outside Minsk. Each cow had a number and was for a special person. Special land, special hothouses. Special controls. It's so disgusting. And no one has answered for that yet.

They stopped seeing me. Listening to me. I showered them with letters and reports. I sent out maps and figures. Everywhere. Four files with 250pages each. Facts, only facts. And to be safe I made two copies, one I kept in my office and the other I hid at home. My wife hid it. Why did I make copies? It's the country we live in. I always locked my office. I came back from a trip and the files were gone. I grew up in the Ukraine, my grandparents were Cossacks. I have the Cossack character. I went on writing.

Giving talks. People had to be saved! Moved away! We were constantly on the road. Our institute compiled the first map of contaminated zones. The entire south was red. This is history now. The history of a crime.

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They took all the apparatus for radiation control away from the institute. It was confiscated without explanation. I had threatening phone calls at home. "Stop scaring people, professor! We'll send you where no one will care. You can't guess where? How quickly they forget!" There was pressure on the institute staff. Threats. I wrote to Moscow.

Platonov, the president of our academy, called me in. "The Belarussian people will remember you some day, you've done a lot for them. But it was wrong to write to Moscow. Very wrong! They want me to fire you.

Why did you write? Don't you realise whom you're threatening?" I had maps and figures. And they had the power to put me in a mental institution. They threatened me: I could have a car accident. They warned me. They could instigate a case against me. For anti-Soviet activity. Or for fraud on account of a simple case of nails that the institute's financial controller hadn't included in the accounts.

They started a criminal case against me.

They got what they wanted. I had a heart attack.

I wrote it all down. It's all in the files. Facts, only facts.

We tested village children. Boys and girls. They measured 1500, 2000,3000 microroentgens. Over 3000. Those girls will never have babies. They have genetic markers.

I saw a tractor. I asked the Party worker who accompanied us, "Is the driver at least protected by a respirator?" "No, they work without respirators." "Didn't you bring them any?" "Of course we did! We brought enough to last them until the year 2000.

But we haven't been handing them out. It would start a panic. Everyone would run off! Scatter!" "What are you doing?" "Easy for you to talk, professor. You get fired, you'll find another job. But what would I do?" What power. Immeasurable power of one man over another. It's not just deceit, it's a war against the innocent.

We were driving along the Pripyat River. People were camping, entire families. Swimming, sunbathing. They didn't know that they had been swimming and sunbathing under a radioactive cloud for the last few week. We were strictly forbidden to talk to them. But I saw the kids...

I went over and tried to explain. They couldn't believe it. "Why hasn't there been anything on radio or TV?"

The man accompanying us -- we usually had someone from the local authorities -- he said nothing. I could see the struggle on his face: should he report me or not? He felt sorry for the people. He was a regular guy.

But I didn't know which way he would turn. Would he report me or not? Everyone made his own choice.

What are we supposed to do with this truth today? Now? How do we handle it? If there's another explosion, the same thing will happen all over again.

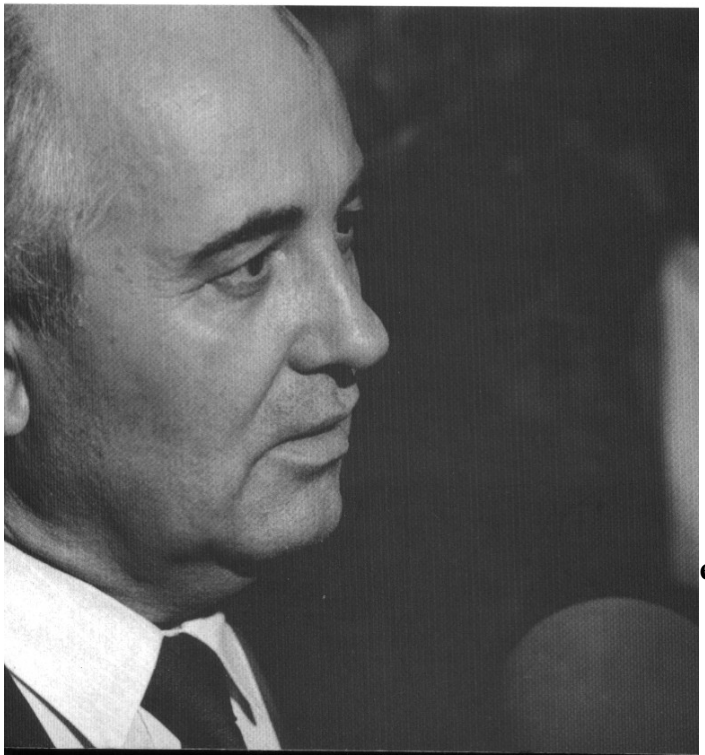
By Vasily Borisovich Nesterenko, former director of the Institute of Nuclear Energy of the Academy of Sciences of Belarus.

“ West must learn of Chernobyl's sad experience in order that the western authorities should know how to act in case of catastrophe” , demonstrates Nesterenko.

MIJAÍL GORBACHOV

CARTA A LA TIERRA

«A los pobres se les debe dar la oportunidad de recuperar su dignidad.»



In the days of Chernobyl, Nesterenko proposed evacuate one circle of 100km around Nuclear Plant.

In spite of the fact that Nesterenko criticized hardly the government for his slow and insufficient evacuation and protection of the population, some years later Gorbachev demonstrates not to bear rancour towards Nesterenko but he is grateful for the good work of Professor in his Institute BELRAD.

Even, Gorbachev's ONG, International Green Cross collaborates with the Institute BELRAD. Those are motives of fort eulogy for both.

92 Carta a la Tierra

El físico bielorruso Vasili Nesterenko, creador de un instituto independiente para la protección radiológica de la población, está desarrollando un experimento sorprendente. Su instituto está llevando a cabo un genuino trabajo profiláctico entre la población de las ciudades situadas en la zona afectada por el desastre de la central nuclear de Chernobil, cuyo suelo continúa contaminado por isótopos radiactivos cesio-137. Sus colaboradores han formado a cientos de jóvenes maestros y enfermeras que explican a los niños en los colegios toda una serie de métodos simples pero efectivos para disminuir la contaminación de los alimentos producidos en la región.

Para poder diseñar medidas de protección de la pobla-

Mijaíl Gorbachov 93

nas. Es necesario, por tanto, incrementar y coordinar los esfuerzos internacionales para conseguir anticiparnos a las consecuencias del cambio climático.

El conjunto de medidas indispensables para salvar el planeta y mejorar la vida de sus habitantes es, en verdad, inmenso. ¿Seremos capaces los habitantes de la Tierra de cambiar el curso de nuestro *Titanic*?

Creo que no son éstos los términos en los que debemos plantearnos la pregunta. En todos los tiempos ha habido hombres y mujeres que han actuado de acuerdo con sus ideales, sin reparar en su interés personal. Algunos de ellos, como Charles de Gaulle o la Madre Teresa, han alcanzado una celebridad mundial, pero la mayoría ha permanecido en el anonimato. La verdadera fuerza capaz de poner en

Radioactivity Survival Lessons in Belarus

By Hervé Kempf
Le Monde
Wednesday 16 March 2005

A serious nuclear accident is also possible in Western Europe and we should prepare for it: that's the essential message of the European research program SAGE (Strategies for the development of a culture of radiological safety), the conclusions of which were presented during a colloquium held March 14 and 15 in Paris. Inspired by the experience undergone by Belarus after the Chernobyl nuclear generator explosion, this program, which involves French, British, German, and Belarusian researchers, aims to "implant and disseminate a culture of radiological safety in Western Europe to face the case of an incident or accident with long-term radiological consequences" (www.ec-sage.net).

A nuclear accident lastingly contaminates the regions affected over a large area, without the possibility of evacuating all the people who are exposed to fallout. They must live in an environment that is undoubtedly weakly radioactive, but still much more radioactive than the natural background. To limit the health impact of these weak doses, precautionary measures conscientiously applied in daily life - "the culture of radiological safety" - can significantly reduce the risks: so believe the SAGE program's actors, who have developed an educational method for life under radioactive conditions.

"It's useful to broadcast this culture in the West for three reasons, explains Jacques Lochard, Director of CEPN (*Centre d'étude sur l'évaluation de la protection dans le domaine nucléaire* [Study Center for the Evaluation of Nuclear Safety) and SAGE coordinator. "First of all, some of our territories remain significantly contaminated since Chernobyl, in the north of Norway's and southern Scotland. Then, we must be prepared in case there should be a big slip-up. Finally, since September 11, 2001, we must imagine acts of terrorism that could lead to significant contamination."

From this perspective, Belarus's experience is critical to imagine what must be done. Situated north of Ukraine, this country - which does not possess a nuclear reactor - received 70% of the radioactive fallout from the 1986 explosion. A million and a half people live in areas where the soil contains radioactivity higher than 37,000 Becquerels (Bq) the square meter. That has translated into a significant mortality. **"In our Bragin district, only one child out of ten may be considered healthy by the end of secondary studies,"** remarks Tatiana Kotlabai, from the Belarusian association "Seeds of Life." "According to the Minister of Public Health's data," **indicates Vassili Nesterenko, Director of the Belrad Institute in Minsk, "90% of the children in the zones contaminated today were in good health in 1985, 20% are today."**

More worrying: the pathologies the children present are not those expected attendant on exposure to radioactivity: instead of cancers, cardio-vascular illness, problems of the immune and digestive canal systems, etc. "When we talk to doctors in these areas," relatesJacques Lochard, "they say that children have old people's illnesses. That is not part of the known systems. All the science about radioactivity is constructed around Hiroshima, a sudden, brutal, external radiation. Chernobyl presents a new situation: millions of people ingest radioactivity with their food. And it certainly seems that other effects beyond the carcinogenic effects are provoked."

How can the population's exposure be limited? Given that the principal means of contamination is through food, it appears, thanks notably to the research programs of Ethos and CORE, that it is most essential to inform the inhabitants, to suggest that they regularly measure their level of contamination and that of the food they eat and finally, to suggest that they change their diet.

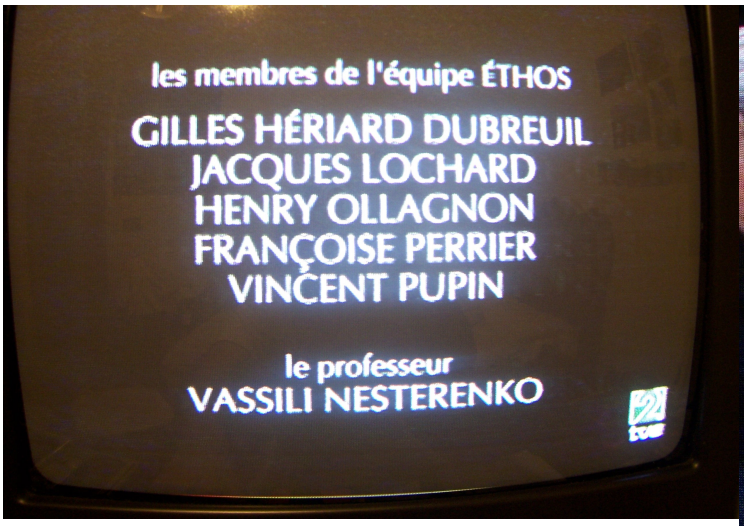
Mrs. Kotlabia, whose association has successfully developed this method in several villages, explains: "The Sadenov family had two children who presented contamination levels of 2,250 and 953 Bq/kg. We talked to the parents, identified the source of contamination - game - and explained to them that they shouldn't eat any game without measuring its radioactivity beforehand. Then we sent the children to a sanatorium with the recommendation that they take pectin. The result: the elder saw his contamination level divided by six, the younger, by twenty-four."

This approach remains to be generalized throughout Belarus, a difficult task, given the state's lack of means. On top of that, the approach has incurred the criticism of Vassili Nesterenko, a key person for that effort, because of the Belrad Institute's unceasing activity to redress the affected populations' state of contamination.

Mr. Nesterenko is sorry that the CORE program does not encourage distribution of pectin - a powder from apple pulp - while studies (including one published in Swiss Medical Weekly in 2004) tend to demonstrate its effectiveness in reducing the level of contamination.

CORE and SAGE's overall approach is keenly criticized by anti-nuclear groups. CEPN's neutrality is questioned, since this organization is financed by EDF, Areva and the CEA [utilities that use nuclear power]. Moreover, participants at the Paris colloquium were greeted by streams of eggs and red paint from a group that left a note signed, "Lonesome cobaye [guinea pig] not so far away from Belarus."

Translation: ***t r u t h o u t*** *French language correspondent Leslie Thatcher.*



http://www.unesco.org/courier/2000_10/uk/planet.htm

The world's first radioactive reserve

Chernobyl: the political fall-out continues

Fred Pearce, environmental journalist and consultant for the British weekly magazine, *The New Scientist*

After the explosion, 50,000 "liquidators" were sent onto the roof of the reactor to "clean up" the surface.

Just how bad was the world's worst nuclear disaster? The answer lies hidden within a web of politics and scientific uncertainty enmeshing the UN and eastern European governments

A sigh of relief ripples across Europe as engineers prepare to shut down Chernobyl, the world's most feared nuclear power plant, on December 15th. Politicians have finally brokered a deal in which Western donors foot the bill of about two billion dollars to close and fully entomb the Ukrainian reactors. Yet for many ordinary citizens, the nightmare continues.

Just a few months ago, on April 26th, thousands marched solemnly through the towns of Belarus, Ukraine and eastern Russia to commemorate the dead from the nuclear disaster 14 years before. At 1:26 am bells tolled to mark the moment when a

Lethally close to Chernobyl, the abandoned city of Pripiat in Ukraine.

Testing the levels of soil contamination in the exclusion zone.

Chernobyl reactor blew and a deadly radioactive fall-out began to blanket their fields and towns.

But as well as mourning, there was fear. Fear of the continuing radiation, which could claim thousands more. And fear of speaking out of turn. That night, Yuri Bandazhevsky, rector of the Gomel Medical Institute in Belarus until his arrest last year, was in forced internal exile in the capital of Minsk. He is one of many researchers who say their work has been suppressed or ignored by governments anxious to play down the radiation risks their citizens still face.

Estimates of the death toll to date range from the 32 offered by UN nuclear scientists to the 15,000 suggested by some Ukrainian researchers. In June, scientists at the UN's Scientific Committee on the Effects of Atomic Radiation (unscear) reported that "there is no evidence of a major public health impact attributable to radiation, apart from a high level of thyroid cancer in children [from which] few should die." Yet the previous day the UN Secretary-General, Kofi Annan, appeared to disagree when he said: "The catastrophe is far from over. It continues to have a devastating effect not only on the health of the people, but on every aspect of society." So what is the truth? And how do these disparities arise?

The accident at the Chernobyl nuclear power plant reduced the Number Four reactor to an inferno spewing out a radioactive cloud for ten days. It released a hundred times more radioactivity than the atomic bombs at Hiroshima and Nagasaki combined. For several days there was total silence, before the panic evacuation of some 116,000 people from an exclusion zone that stretched up to 30 kilometres from the plant.

Only years after the accident did the public learn that a larger zone some 150 kilometres away near the Belarus town of Gomel and extending into Russia suffered heavy fall-out in rain shortly after the accident. It emerged in 1989 that a fifth of Belarus had been significantly contaminated. Some 400,000 people were resettled. And today around four million people still live in areas with some acknowledged contamination.

Official secrecy inside the Soviet Union and its successor governments about the extent of the contamination continues to bedevil the task of keeping people safe, says Greenpeace's Chernobyl specialist Tobias Muenchmeyer. Researchers inside the affected countries agree. "A regime of secrecy was accepted in our country from the very first second the catastrophe happened," says Vladimir Chernousenko, the Ukrainian scientist who co-ordinated the post-accident clean-up.

A partial information blackout by governments, combined with scientific caution, has helped lead UN agencies into seriously underestimating the death toll, Muenchmeyer believes. Critics of the nuclear industry such as Rosalie Bertell, president of the International Institute of Concern for Public Health in Toronto, say there is another political reason. They point to a 1959 agreement between the International Atomic Energy Agency and the World Health Organization, which said that "the IAEA had the primary responsibility for encouraging, assisting and co-ordinating research on, and the development and practical application of atomic energy." According to Bertell, "the IAEA has since considered itself to be the watchdog over information about radiation health effects which is distributed to the public." Bertell and other organizations this year called for the who to amend the agreement.

The most important radioactive isotopes released at Chernobyl were iodine and caesium. Iodine-131 has a half-life (the time it takes for half the atoms of a radioactive isotope to decay) of eight days. It was mostly inhaled and eaten in contaminated food. Caesium-137 has a half-life of some 30 years. It is still present in soils and vegetation and continues to contaminate people through foodstuff. Some lesser isotopes have half-lives of hundreds or even thousands of years.

Controversy over the casualty list

Who suffered? In the front line were the "liquidators"–the estimated 600,000 to 800,000 soldiers and public employees drafted in to make the reactor safe and bury contaminated waste. Some 50,000 of them worked on top of the reactor. "They were supposed to stay on the roof to fight the fire for only 90 seconds, then be replaced. One can easily guess this did not happen," says Jean-Pierre Revel, senior health official at the International Federation of the Red Cross. As a result, 237 liquidators were hospitalized; 32 died.

But since then, the Soviet Union and its successors have been unable or unwilling to keep track of this most-at-risk group. According to Leonid Ilyin, a former Russian member of the International Commission on Radiological Protection, "none of these men was registered by name. None was checked [for subsequent health] on a regular

basis. They all went back to their homes." This failure is probably the largest organizational cause of the disputes over Chernobyl's death toll. Last April, Viacheslav Grishin, president of the Chernobyl League–a Kiev-based organization that claims to represent the liquidators–said 15,000 liquidators had died and 50,000 were handicapped. His source was a controversial estimate by Chernousenko, based on likely cancer rates from radiation doses that he believes the liquidators received. Cancers have been the biggest long-term medical fear. By 1991, doctors were reporting many cases of thyroid cancer among children under four at the time of the disaster. In 1992, a group of Western researchers, including Keith Baverstock of the who, agreed that Chernobyl was the likely cause. Yet it was only in 1995, after some 800 cases had emerged, that the UN system formally accepted the finding. This delay had serious implications in finding and treating the disease, which is not fatal if caught early enough.

Playing politics and crushing dissent

The conclusion had been initially controversial partly because the evidence from Hiroshima and Nagasaki suggested that there should be far fewer cases. But politics also entered the equation. The Economist magazine speculated that "if the health risks have been underestimated or understated, the American government could face new lawsuits on everything from the Nevada [nuclear] tests to the Three Mile Island nuclear accident in 1979."

At any rate, there are now some 1,800 recorded cases of thyroid cancer attributed to Chernobyl. In the most contaminated districts, such as Gomel, childhood rates are 200 times those in western Europe. Estimates of the total number of cases expected to arise in the future range from a "few thousand," suggested by the IAEA, to the 66,000 predicted for a single group–Belarusian children under four at the time of the disaster–by who scientist Elisabeth Cardis, who stressed that "the risk estimates are very uncertain."

What about other cancers which take longer to develop? Officially, the who stands by its assessment of 1996 that while "there have been some reports of increases in the incidence of specific malignancies in some populations living in contaminated territories and in liquidators, these reports are not consistent and could reflect differences in the follow-up of exposed populations." But some of its scientists are sceptical. They ask not what can be proved, but what can be expected on the basis of known science.

Based on Hiroshima and Nagasaki, Baverstock expects an "excess" of some 6,600 fatal cancers, including 470 leukaemia cases. But a team of Belarusian doctors claims to have found leukaemia rates four times the national average among heavily exposed liquidators. And there are fears that, as with thyroid cancer, rates could be far higher than expected.

But scientific uncertainty should not detract from the fact that there are political reasons why the truth about the disaster may remain hidden, says Muenchmeyer of Greenpeace. National governments, who act as gatekeepers for most of the statistics reaching UN agencies, have a political agenda, he says. The Ukraine is running 14 nuclear reactors with another four under construction, according to the IAEA. "So the Ukraine doesn't want to ruin the image of nuclear power by stressing the harm done by Chernobyl," says Muenchmeyer, "but they also want aid for health programmes. So then they are interested in showing the burden. Often they contradict themselves within a few days."

The Belarus government has consistently downplayed the disaster, even though the country received an estimated 70 per cent of the fall-out. "They decided that the territory and the number of people affected are so great, and the government so poor, that they cannot solve the problem. They decided to shut down dissent," says Muenchmeyer. This has hampered research and apparently prevented findings by local scientists from reaching UN agencies.

Two years ago, **Rosa Goncharova of the Institute of Genetics and Cytology in Minsk reported evidence that congenital abnormalities were turning up in the children** of those irradiated by Chernobyl. She told a conference that since 1985, cases of cleft palate, **Down's syndrome and other deformities had increased by 83 per cent in the areas most heavily contaminated, 30 per cent in moderately contaminated areas and 24 per cent in "clean" areas.**

But two years later, when contacted for this article, Cardis of the WHO said she had "not received copies of the paper" by Goncharova. Nor had she received copies of work by the director of the independent Belarusian Institute of Radiation Safety (Belrad), Vasily Nesterenko. He had found that in the most contaminated areas, the incidence of diseases of the circulatory system had risen fourfold and deaths among children from respiratory diseases were up 14-fold (see interview).

The dangers of the twilight zone

And consider the fate of Yuri Bandazhevsky, whose case has been taken up by Amnesty International. As rector of the Gomel Medical Institute, he carried out autopsies at the city's forensic morgue, on bodies whose deaths were not considered connected to Chernobyl. He examined their internal organs and compared them to the organs of rats that he had fed grain containing radioactive caesium. He was shocked by his findings: "The pathological modifications of the kidneys, heart, liver and lungs was identical to those among the experimental rats." From this he concluded, "that accumulation of radiocaesium in the organs played a major role in the triggering of pathological responses." In other words, it made them ill and even killed them.

His paper went ignored. His subsequent criticism of the post-Chernobyl research conducted by the Ministry of Health brought him more enemies. And last summer he was arrested on unspecified bribery charges, and locked up for six months. His computer and all his files were confiscated and he remains confined to Minsk "under investigation."

People are still being exposed to radiation from Chernobyl. In large areas of Belarus in particular the environment is still heavily contaminated. The who says "some foods produced by private farmers do exceed [who limits]." But it points out that most large farms minimize take-up of radioactivity in soils by deep ploughing and applying fertilizers. "No food produced by collective farms now exceeds the limits."

But thousands of people rely on private farms, according to Belrad's Nesterenko, who maintains that a quarter of the food grown inside the contaminated zone supersedes official radioactivity limits. More than 500 villages are drinking contaminated milk. Moreover, many people rely on "wild" produce such as mushrooms, berries and hunted meat–the most risky food of all says the who's Baverstock.

And, of course, there are the people who return to live a twilight life inside the exclusion zone, replanting their contaminated gardens, gathering food from the forests and raiding abandoned food stores. Most are old women, who judged that the radioactivity could do them little harm at their age. But there are recent unconfirmed

Example of multiplication of cases of Cerebral Paralysis. Center or

<u>WE</u> <u>CAN</u> <u>AND</u> <u>MUST</u> HELP TO EFFICACIUS Institute BELRAD IN ORDER TO PREVENT A LOT OF MORE SIMILAR CASES AND OTHER DISEASES. IT´S AN EVOIDABLE CRIME IN A LOT OF CASES (WITH PREVENTIVE INFORMATION AND DECREASING THE LEVELS OF RADIATION IN BODIES).

The world's first radioactive reserve

In the weeks after the accident, coniferous trees and mammals that ate ground vegetation received the highest doses of radiation. Trees died and were buried by the liquidators. Cows grazing heavily contaminated grass near the reactor died. So too did most of the mice in the exclusion zone. Most intriguingly for scientists, the survivors were almost all female. Only after four generations did male numbers begin to recover.

Mona Dreicer, a U.S. researcher who collated material for a major international conference held on the Chernobyl aftermath in 1996 (Vienna), says that levels of radioactivity in surface soils had fallen by a factor of a hundred by the autumn of 1986, and "by 1989 the natural environment had begun to recover." Badly damaged conifers were making cones again and the rodent population was growing fast.

Today, the roll call of wildlife includes wild boar, elk, deer, foxes and some 200 wolves. The list of animals failing to return is

www.fortunecity.com/boozers/vines/858/bandazevski/france/25.htm **(French)**

Les mystères de Tchernobyl - 3
Nesterenko List.

Je ne suis pas un humanitaire, je suis physicien. Donc des faits, seulement des faits... Un jour nous devrons répondre pour Tchernobyl... Viendra un temps, où nous devrons répondre, comme pour l'année 37. Il faut consigner des faits... Des faits! On les exigera...

Que devons nous faire de cette vérité aujourd'hui? Maintenant? Comment nous comporter envers elle? Si ça explose une autre fois, si la même chose se répète...".

(Monologue de Vasili Nesterenko dans la nouvelle "La Supplication" de Svetlana Aleksievitch)

"Biélorusskaia Délovaia Gazeta" continue son enquête sur les dessous de l'emprisonnement du recteur de l'Institut de médecine de Gomel, professeur Bandazhevsky. Notre précédente publication a obligé les autorités à commencer à s'agiter. Ils entreprennent de nouveaux pas à la recherche de justifications pour l'arrestation du savant: le parquet est passé aux actions illégales, en promettant de ne pas punir les étudiants de l'institut qui confesseront spontanément d'avoir donné des pots de vin au recteur...

Hélas, nous avons de sérieuses raisons de craindre pour le destin d'un autre héros de notre enquête, le professeur Vasili Nesterenko. C'est lui qui, en collaboration avec l'ex recteur de Gomel, dresse le Registre des doses de radiations ou, plus concrètement, la liste de ceux qui sont condamnés à mourir à cause de l'inaction des autorités biélorusses.

Le Registre des doses de radiations mesurées, que le professeur Nesterenko est en train de préparer malgré les obstacles (rappelons que, malgré la décision officielle, le financement n'a pas été affecté et les travaux n'avancent pas), présentera le tableau

de la terrible situation où se trouve la population de la zone de Tchernobyl. Les dizaines de milliers de liquidateurs biélorusses qui sont déjà morts, et les dizaines de milliers qui mourront d'ici peu d'années ne soutiendront pas la comparaison avec les dimensions des "glaçons fondus" du professeur Bandazhevsky. Le Registre inclura la dose des radiations réellement reçues au cours de chaque année depuis avril 1986. C'est poser publiquement le problème d'une demande d'aide à la communauté internationale. Car Belarus, compte tenu de sa situation économique actuelle, ne peut pas venir seule à bout de la catastrophe. La création du Registre pose son auteur au niveau du célèbre Schindler, et le Registre devient ainsi un "NESTERENKO LIST". Sur la base des données du nouveau registre les autorités devront renoncer une fois pour toutes aux tentatives suicidaires de retour dans les territoires pollués, de formuler un nouveau concept de vie (et non de survie, comme aujourd'hui) de la population dans ces territoires, prévoyant si nécessaire la continuation de l'évacuation. En vérité il faut préciser: "les autorités seront obligées" si le travail sur le Registre sera porté à son terme. L'arrestation du recteur de l'Institut de médecine de Gomel, Yuri Bandazhevsky, rend cette tâche plus difficile.

Le premier choix du professeur Nesterenko

Donc, le second nom dans notre histoire, le professeur Nesterenko, est une personnalité très éminente dans le monde scientifique de Belarus et de l'Union des Etats Indépendants. Disons plus, c'est une personnalité de renommée mondiale.

Pendant 30 ans Nesterenko a travaillé à l'Institut de l'énergie nucléaire à Sosny près de Minsk à la création de réacteurs mobiles: le projet était de les placer sur des "mille-pattes" (construits dans l'usine des tracteurs à roues de Minsk), de les transporter dans les régions climatiques difficiles d'accès mais riches en matières premières et, avec le support de ces réacteurs sur châssis, de créer des "villes-jardins" dans les toundras et les déserts. Les travaux étaient destinés à transformer, la carte économique du monde en faisant fleurir les régions septentrionales de l'URSS, de la Sibérie, des pays du tiers monde... Nesterenko devait rendre compte de l'avancement des travaux tous les mois devant la Commission industrielle-militaire du Conseil des ministres de l'URSS à Moscou. A la fin il créa son réacteur. Mais c'était un an avant le fatal 1986, qui obligea le savant de faire un choix... En 1985 un des réacteurs était complètement terminé, un autre passait des tests. Mais Nesterenko n'avait pas pu défendre ses réacteurs contre les autorités, épouvantées par l'accident de Tchernobyl, et le travail de 30 ans fut perdu. Cela ne lui fut pas pardonné par beaucoup de gens, notamment par ses collaborateurs, qui se virent arracher 30 ans de leur vie. Car après l'accident Nesterenko décida d'orienter entièrement les travaux de l'institut sur la protection radiologique de la population...

Dès les premiers jours après l'accident de la Centrale atomique de Tchernobyl Nesterenko dirigea, en collaboration avec l'académicien Legassov, la partie scientifique des travaux pour la liquidation de ses conséquences. Des 800 mille hommes qui reçurent des certificats de liquidateurs de Tchernobyl sous le régime soviétique, des dizaines de milliers sont déjà morts, la moitié sont devenus invalides.

C'est triste à dire, mais Nesterenko, irradié en 1986, appartient lui aussi à cette cohorte de condamnés.

Le physicien Nesterenko tenta de donner des recommandations pour la solution des conséquences de la catastrophe. Elles furent simplement ignorées. Il démontra, par exemple, la nécessité d'évacuer les habitants de la zone des 100 km autour du réacteur et d'évacuer tous les enfants de Gomel...

Persécuté par tout le monde, il quitte l'institut et fonde l'Institut Biélorusse de Sécurité Radiologique BELRAD. Il élabore des dosimètres, des radiomètres, des systèmes de contrôle des produits alimentaires, des additifs alimentaires qui évacuent les radionucléides de l'organisme, il tente d'obtenir des financements, il écrit des messages aux parents dans la tentative de sauver leurs enfants... Finalement il reçoit d'organisations de bienfaisance irlandaises (puis allemandes) des fauteuils-SIH (spectromètre d'irradiation humaine) et part, sur invitation des présidents "progressistes" de kolkhozes, mesurer les radionucléides dans l'organisme des habitants de la zone de Tchernobyl. Il publie ces monitoring, les envoie au Ministère de la Santé, au gouvernement. Mais ses possibilités sont limitées, non seulement par

les portes des bureaux des fonctionnaires, mais aussi par le niveau technique, par les conditions domestiques de son travail, et par les forces de sa femme, qui pendant des nuits entières dactylographie les travaux du professeur, les multiplie, les envoie dans le monde entier...

"Avant la réclamation..."

Le professeur Nesterenko n'est pas le premier à avoir tenté de créer le monitoring des doses d'irradiation radioactive reçue par les habitants de la zone: les Registres, dont l'établissement est financé par le budget de l'état, apparaissent d'abord en 1992, puis en 1998.
Nesterenko est le premier à proposer d'inclure dans les chiffres totaux la dose obtenue "à partir de mesures directes des radionucléides dans l'organisme concret". "Les doses complètes (accumulées depuis 1986 N.d.t.) et les doses annuelles peuvent constituer les critères les plus objectifs pour le Ministère des Situations d'Urgence, pour le Ministère de la Santé, pour le Ministère de l'Agriculture et du Ravitaillement et en général pour le gouvernement de la république, pour la réalisation des mesures de sécurité de la population et pour la répartition plus efficace des ressources financières du Programme de Tchernobyl", - écrit Nesterenko (http://nesteren.da.ru).

Comme Bandazhevsky il recueille minutieusement les faits, ceux dont il parlait à Svetlana Alexievitch et qui seront, comme il l'espère, "réclamés". Il effectue un audit indépendant des résultats des mesures officielles et affirme: "Le Registre des doses annuelles accumulées par la population de Belarus-98, établi par l'Institut de Recherche Scientifique et Clinique de la Médecine des Radiations et d'Endocrinologie, approuvé par le Ministère de la Santé de la République de Belarus en mars 1999, est erroné et inexact à cause du choix de la méthode indirecte de détermination des doses d'irradiation par les radionucléides contenus dans le lait et dans les pommes de terre, ainsi qu'à cause de la non représentativité de ces échantillons en quantité trop faible dans chaque village. Le résultat est que les doses annuelles sont diminuées dans ce registre de 2 à 7 fois..." (http://nesteren.da.ru). Il n'est pas étonnant, selon Nesterenko, qu'en adoptant une telle

méthode pour l'établissement du Registre-98 n'y figurent que 128 villages (56 mille habitants), dont les doses annuelles dépassent 1mSv/an. Dans le précédent Registre-92, par exemple, ces villages étaient au nombre de 1102, et y habitait environ 1 million de personnes (http://nesteren.da.ru). Or si les doses "officielles" sont inférieures à un millisivert (1mSv) par année, l'état ne fournit aucune aide aux populations.

Sur la base de ce Registre les autorités ont pu effectivement déclarer à haute voix "nous sommes en train de triompher contre les radiations. Nous avons même déjà gagné". L'argent n'a pas été dépensé pour rien, Hourra! Cela aurait été possible, s'il n'y avait pas eu Bandazhevsky et les résultats de ses découvertes. Et si il n'y avait pas eu Nesterenko, catégorique dans son appréciation: "Ce Registre ne peut pas servir de base aux habitants des régions de Tchernobyl et au gouvernement pour l'organisation de la protection contre les radiations. Pour cette raison le Registre-98 doit être supprimé" (http://nesteren.da.ru).

Nesterenko n'est pas toujours seul. Dix éminents professeurs et académiciens, qui travaillent continuellement sur la problématique de Tchernobyl, ont fait partie de la commission parlementaire, présidée par Nesterenko, qui a abouti à la même conclusion. (N.d.t.: Au mois d'avril dernier, à la suite d'une intervention critique de Nesterenko devant le Parlement de Belarus au sujet du Registre officiel, les parlementaires l'invitèrent à faire du travail constructif, au lieu de critiquer. Une commission ad hoc fut constituée que Nesterenko accepta de présider à condition que n'en fissent pas partie

les membres de la commission précédente. Ce qui aboutit à la conclusion coïncidente avec ses propres analyses.)

Le deuxième choix du professeur Nesterenko

Il s'efforce de faire connaître à tout le monde les faits recueillis par sa méthode... Son monitoring est indispensable, parce que premièrement il est nécessaire de savoir CE qui se passe réellement sur le terrain. Deuxièmement, comment et dans quelle mesure CELA peut être changé. Troisièmement, l'année prochaine prennent fin les dispositions du Programme Tchernobyl 1996-2000. Quatrièmement, l'année 2001 n'est pas loin, année des élections présidentielles en Belarus. Et cinquièmement, - mais ne le savent que quelques dizaines de personnes, - en l'an 2001 se termine la première période de demi-vie du plutonium-241, dont sont recouvertes des régions entières autour de Gomel... (N.d.t.: Au bout de 13,2 ans (demi-vie) cet élément, mesuré en curies, devient plus nocif pour la santé.)

On sait dans les couloirs du pouvoir que des personnes de l'équipe d'Alexandre Loukachenko avaient offert au savant "dissident", (dont la pension s'élève à 50 $ par mois), le poste de conseiller du Président pour les problèmes de Tchernobyl. Nesterenko refusa, en déclarant que de toute façon il répondra à tout ce qu'on lui demandera, et dira la vérité. On ne sait pas exactement ce qui poussa le professeur à refuser les hautes fonctions dirigeantes: le souvenir du printemps 1986, quand les fonctionnaires locaux absorbaient en cachette le iode stable pour se protéger et protéger leurs familles contre le iode radioactif ? Ou bien le fait que Guénnadij Karpenko (opposant du pouvoir, qui organisait la protection des populations N.d.t.) avait été élève de Nesterenko, et que rarement les professeurs trahissent leurs élèves...

Au début de cette année le pouvoir demanda finalement la vérité à Nesterenko: la proposition que le professeur avait adressée au Ministère des Situations d'Urgence de créer un nouveau Registre des doses enregistrées reçut l'approbation du gouvernement. Une nouvelle méthode d'élaboration du monitoring fut en même temps homologuée. Méthode qui aurait requis la modification du concept de vie dans les territoires pollués...

Selon les dernières données 135 mille personnes ont été évacuées de la zone. Mais aujourd'hui encore les biélorusses vivent officiellement et légalement là où, dans les régions voisine d'Ukraine et de Russie, il ne reste depuis longtemps que des villages abandonnés. Dans les territoires ayant un niveau de radioactivité entre 15 et 40 curies par km carré vivent chez nous 130 mille personnes, alors qu'en Ukraine et en Russie les habitants sont évacués de ces lieux depuis longtemps! (http://chernobyl.da.ru). Nos concitoyens y vivent, cultivent le blé, élèvent le bétail, amènent les enfants chez les grands-mères, se marient et font des enfants...

Qu'est ce qui est plus important pour la nation: des radiologues ou des psychiatres?

La Registre de Nesterenko pourrait modifier la situation défavorable qui s'est créée ces dernières années pour la nation qui se bat seule contre les conséquences de l'accident de la centrale de Tchernobyl. Nous sommes seuls parce que la tragique réalité est présentée intentionnellement sous de fausses couleurs. Qui, hormis un petit cercle de scientifiques et trois dizaines de fonctionnaires des différents ministères, connaît les résultats des recherches des professeurs Nesterenko, Bandazhevsky, Kondrachenko?.. Et les scientifiques non plus ne savent pas tout. En outre ce ne sont pas eux qui pensent comment utiliser l'information reçue et quoi faire par exemple avec les données des recherches de Kondrachenko. **D'après leurs données, près de 42% des enfants nés dans la**

zone de Tchernobyl ont un retard de 3-4 ans dans le développement psychomoteur. La norme pour les enfants qui naissent dans un milieu social ordinaire avec un retard dans le développement psychique et des déficiences intellectuelles représente 4%. 8% c'est déjà une épidémie. Dans toute l'histoire de l'URSS le plus grand pourcentage de naissances d'enfants de ce genre a été enregistré dans la ville des malheureuses tisseuses de Ivanovo: 12% (http://nesteren.da.ru). MAIS CHEZ NOUS LES ANOMALIES SONT 4 FOIS PLUS NOMBREUSES! L'intervention de l'État est indispensable pour guérir la société. Mais les autorités (comme l'opposition) se taisent. Qu'attendent-ils?.. ce sera le thème de notre prochain article.

Quant au Registre de Nesterenko, ou "Nesterenko List" c'est bien plus qu'un simple tournant vers un nouveau cours dans la solution des problèmes de Tchernobyl. C'est une chance pour la nation. L'arrestation de Bandazhevsky aura certainement des conséquences pour la poursuite du travail de Nesterenko. S'il est impossible d'empêcher que la vérité sur l'accident émerge, les personnes intéressées feront tout le possible pour en limiter l'accès. Comme c'est le cas aujourd'hui par exemple dans l'Institut de médecine de Gomel. Car Bandazhevsky a laissé derrière lui une école de savants radiologues de talent, capables de continuer son travail. Et contre qui est dirigée l'ordonnance du comité exécutif régional de Gomel (!) sur la révision des programmes de recherche scientifique de l'école supérieure, si ce n'est contre eux et contre les idées de Bandazhevsky,? Dès le début, disent-ils, l'ex-recteur a orienté les programmes de façon incorrecte, exclusivement sur la problématique de Tchernobyl. Quels sont les spécialistes que veulent les autorités, qui refusent obstinément de reconnaître la catastrophe nationale? Des psychiatres pour les victimes de Tchernobyl?.. Si tout restera comme avant, ils seront effectivement nécessaires en grand nombre...

P.S. L'enquête journalistique de "BDG" serait impossible sans l'aide du "Journal de Tchernobyl" en réseau (directeur, Iury CHEVTZOV). Le "Journal de Tchernobyl" se trouve à l'adresse Internet: http://chernobyl.da.ru. A travers ce site il est possible d'entrer dans les pages riches d'informations de l'Institut biélorusse de sécurité des radiations BELRAD (directeur V.B. Nesterenko ou directement à l'adresse: http://nesteren.da.ru) et dans la page personnelle de Iury Bandazhevsky. Actual : www.belrad.nsys.by

"Bélorousskaia Délovaia Gazeta", 1999

Down: The Prof. Nesterenko with girl of the Paediatric Cancer Hospital near to Minsk. In this hospital BELRAD it is treating with VITAPECT to 25 children to try to prevent that children those who are cleaned of some cancer relapse again as soon as one has lowered the levels of radioactivity that they were accumulating.

Now an example of report of project of collaboration. In this case BELRAD + Association ABAECHE, from Spain. Its necessary more projects in order BELRAD can protect to a lot of more children and families. :

(We animate to you, to enterprises, or to ask to organisms, etc in order to finance similar projects; the collaboration is very easy.)

INSTITUTE OF RADIATION SAFETY "BELRAD" (BELARUS)

ASSOCIATION «ABAECHE» (SPAIN)

"APPROVED"
by the director of the PUE
"Institute of Radiation Safety
"Belrad"
_____V.B. Nesterenko
"____"___
_____2006

REPORT about the work in framework of the Contract No.101

"RADIATION MONITORING OF CHILDREN FROM VETKA AND CHECHERSK DISTRICTS OF GOMEL REGION"

Minsk
2006

Contents

Introduction

In October 2005 the Institute of Radiation Safety "BELRAD" (Belarus) and the association "ABAECHE" (Spain) concluded the Contract No.101 "RADIATION MONITORING OF CHILDREN FROM VETKA AND CHECHERSK DISTRICTS OF GOMEL REGION". The objective of the activities under the Contract consisted in keeping children's health at cost of reducing the specific activity of ^{137}Caesium incorporated radionuclides, in decreasing the internal exposure dose, in demonstration of the efficiency of the decontamination of the organism from radionuclides with the help of the preparation "Vitapect", in education of children to basic principles of radiation safety, in consulting the population how to keep house in conditions of the radioactive contamination of the territory. The work under the

present Contract took place in the villages Svetilovichi of Vetka district, Belyayevka, Voznesensky, Zalesye, Merkulovichi, in Motnevichi, Nisimkovichi and Polesye of Chechersk district of Gomel region.

In Gomel region, one of the most affected by the Chernobyl accident regions of the Republic there is a dangerous situation concerning the health state of the population, first of all children. Mortality is higher than birth-rate. There is a constant grow of diseases, the list of diseases is expanding. One of the factors influencing the situation is the radioactive contamination of the area and the consume of food contaminated by radiocaesium. All inhabitants have access to gifts of nature which are over 80 to 90% contaminated by the radioactive Caesium higher than the Republican Permissible Levels (RDU) are and the game - 100%. Samples of contaminated milk from private plots of land of the inhabitants are permanently detected.

The main radiation dose (over 80%) is received by the inhabitants of the contaminated districts of Belarus through the consumption of local foodstuffs which are heavily contaminated by ^{137}Cs and ^{90}Sr radionuclides. It should be mentioned that the contribution to the dose forming of foodstuffs produced at factories is lower than the contribution of the foodstuffs produced by private households and of natural products (game, fish from rivers and lakes, berries, mushrooms, herbs).

During 1990 to 2005 the radiation monitoring of ^{137}Cesium contamination of foodstuffs in the Chernobyl regions of Belarus (> 350 thousand measurements) demonstrated that over 15% of milk had a ^{137}Cs-concentration over 100 Bq/l (with maximal values reaching 2000 to 3000 Bq/l), 80% of mushrooms – over 370 Bq/kg (with maximal values reaching 50000 Bq/kg).

Consuming the same food as the adults have, children get 3 to 5 times higher doses from local foodstuffs because of their lower weight and of the more active processes of metabolism in children's organisms. Children living in villages have in 5 to 6 times higher doses than children of their age have living in cities.

There are several basic principles of the radiation protection of the human health:

- **Resettlement of all the inhabitants, the families with children first of all, from the regions where it is impossible to organize the production of uncontaminated foodstuffs when implementing all radiation protection measures;**
- **Implementation of protective measures in agricultural technologies reducing the radionuclide transition from soil to plants (cultivation of pastures and haymaking, liming of acidic soils, application of potassium and phosphorus fertilizers etc.);**
- **^{137}Cs concentration reduction in milk, the basic foodstuff forming dose, through feeding cows which give milk by fodder with sorbents. They help to reduce radionuclide contents in milk in 3 to 4 times. Application of milk separators etc.;**
- **periodic examination of the population for radionuclide concentration in the organism, periodic medical checkup;**
- **providing children and pregnant women with uncontaminated foodstuffs and food additives with vitamins which improve the general resistance and anticancerogenic resistance of the organism and accelerate the removal of radionuclides, heavy metals and nitrates from their organism, their recuperation in clean districts, rest at sanatoria or abroad 1 to 2 times a year;**
- **acceptance of the new way of life in the Chernobyl regions, training the teachers, pupils and introduction of simple radioprotective measures in families.**

One of the important parts is the demonstration of the efficiency of available pectin preparations for the radioprotection of children.

1. Measuring instruments

The basic method of the research is the measurement of radionuclide contents in the child's organism, with the help of the automated **complex for spectrometry of the human internal**

radiation. **The research was undertaken by the laboratory for spectrometry of the human radiation of the Institute of Radiation Safety "Belrad", certified for independence and technical competence by the System for certification of testing laboratories of the Republic of Belarus (certificate No. BY/112 02.1.0.0385). The laboratory is equipped with seven WBC "SCREENER-3M" (developed and produced by the Institute for Human Ecology, Kiev, Ukraine, software completed by the specialist of the Institute of radiation Safety "Belrad"). Each «SCREENER-3M» is subjected to the obligatory annual metrological certification. The standing certificate is to be given.**

The standing work orders on measurements are defined by the "Methodical Recommendations on Implementation of Measurements of the Activity of the Gamma-Irradiating Radionuclides in the Human Body with the Help of Spectrometers of the Human Radiation "SCREENER" and "SCREENER-3M" (MBI.MN 1467-2000) approved by the Gosstandart (State Committee for Standards) of the Republic of Belarus, "Radiation Safety Norms NRB-2000" and "Basic Sanitary Rules for the Work with Radioactive Substances And Other Sources of Ionizing Radiation OSP-72/87".

The measurements are performed by the stuff knowing the medical recommendations, having passed a training course, having passed exams at the training centre of the firm-producer and having received the appropriate certificates.

The automated complex for spectrometry of the human internal radiation "SCREENER-3M" is made for determination of the activity of the gamma-irradiating radionuclides in the human body and for the identification of the dose activity.

The complex "SCREENER-3M" consists of a diagnostic chair, a personal computer and a control source.

The diagnostic chair consists in a detector, e.g. a scintillation counter registering nuclear radiation and elementary parts by luminescence, and a photoelectric multiplier (PEM). Passing through the luminescing substance (crystal NaI(Tl), seized 150x100 mm) apart from ionizing atoms and molecules the charged particle actuates them. Returning to the basic (non-actuated) status the atoms emit the photons and they in their turn knock off the electrons getting to the PEM cathode. As a result of this, an electric impulse appears on the PEM anode and reaches the preliminary detector. The signals formed by the amplitude and durability reach the peak detector of the block of the amplitude-digital transformer. Together they make digitize and code the signals, which are registered by the RAM of the microcomputer.

The complex determines the activity of the incorporated radionuclides: ^{137}Caesium, ^{134}Caesium, ^{40}Potassium, ^{226}Radium, ^{232}Thorium, ^{54}Manganese, ^{60}Cobalt, ^{131}Iodine etc.

Nowadays, the basic element forming the internal radiation dose is ^{137}Caesium.

Unit of measure - Becquerel per kilogram (Bq/kg).

For the determination of the dangerous level of the radionuclide concentration in the organism the Institute "Belrad" suggests following values:

interference level or control level for children – 20 Bq/kg,

maximally permissible level for children – 70 Bq/kg,

interference level or control level for adults – 70 Bq/kg,

maximally permissible level for adults – 200 Bq/kg,

Additionally to the radionuclide concentration, the complex "**SCREENER -3M**" measures the concentration of potassium in the human organism, that is extremely important for the health of the person. **The principle of the determination of the potassium concentration in the organism is following. The radioactive isotope ^{40}Potassium has a constant proportion among all potassium isotopes (0,0119 % in weight). By measuring the ^{40}K-radionuclide concentration in the organism, the complex calculates automatically the overall potassium concentration in the organism in grams,**

according to this proportion. At the same time, it calculates the norm of the potassium concentration, individually for each person. The potassium norm in the organism depends on sex, age and weight of the person.

2. Pectin preparations

For the last 19 years the population of Belarus has been exposed to constant combined radiation effects and chemical factors.

Therefore, the correction of the diet of the inhabitants of Belarus by the application of enterosorbents, first of all natural bioactivie components, seems to be extremely necessary.

The principles of the pectin preparations permitting the quick removal of radionuclides is acting on enterosorption. Enterosorption is based on binding and removing exogenic and endogenic substances, submolecular structures and cells, for medical and prophylactic reason from the gastrointestinal tract. General enterosorption is based on absorption and removal of toxic substances from the organism, incorporated in tract from the outside.

The decontamination of the human organism from radionuclides as well as from toxic heavy metals passes, basically, through kidneys, liver and gastrointestinal tract. Time for removing a half of all ^{137}Caesium is 90 to 150 days for adults and 15 to 75 days for children (depending on their age).

The Clinical Research Institute for Radiation Medicine and Endocrinology developed the protocol for the application of pectin preparations: for adults – 1 to 2 teaspoons 2 to 3 times a day in ¼ of a glass of water, tea, compote, juice or any other drink; for children – 1 teaspoon 2 times a day. The duration of rehabilitation course 3 weeks 2 times a year, in ecologically unfavorable regions - 3 to 4 times a year.

The Institute "Belrad" developed, produces and applies the preparation "Vitapect" in practice the preparation "Vitapect". It is a food additive as a kind of the enriched apple drink. The Institute "Belrad" has a Certificate of the State hygienical registration No 08-33-0.259941, given by the Ministry for Public Health Services of the Republic of Belarus permitted to produce, sell and applies the "Vitapect". The Certificate is valid till March, 2007.

The contents of the vitamin apple drink: apple powder enriched by pectin, vitamins B_2, B_6, B_{12}, vitamin C, vitamin E, β-каротин, folic acid, microelements (K, Zn, Se), sweetener (milk sugar), citric acid in doses, recommended by the MPHS-bodies. It contains no preservatives and artificial aromatizers.

3. Results of the radiation monitoring of children

From November 2005 to January 2006 the Institute of Radiation Safety "Belrad" performed the radiation monitoring of children in the villages Svetilovichi of Vetka district, Belyayevka, Voznesensky, Zalesye, Merkulovichi, Motnevichi, Nisimkovichi and Polesye of Chechersk district of Gomel region of Belarus in framework of the Contract No.101 financed by the association "ABAECHE" (Spain).

The objectives of the Contract are:

- implementation of the radiation monitoring of children;
- distribution of the information collected during the monitoring, explaining this information to each examined child;

- acquaintance of the population of the affected districts with the local radiological situation and some simple measures aiming at the reduction of the dose;
- demonstration of the efficiency of pectins by documenting their effects on the group of children;
- submitting the concrete lists of children who need radiation and social protection, first of all, to the population, local authorities, the Government of the Republic and humanitarian foundations;
- performance of the actions for the sociopsychological rehabilitation of the population.

The work consisted of one stage implemented according to the following schema: first radiological measurement – pectin cures – repeated radiological measurement. The number of the measurements performed is given in the table 1.

Table 1 – Number of measurements planned and actually performed

Number of radiological measurements		Number of the delivered pectin preparation „Vitapect-2“	
Expected by the Contract	Actual	Expected by the Contract	Actual
700x2=1400	1665 (incl. 1464 children)	693	747

Below there are the data of measurements. When making statistical processing of the data only the results of measurements of schoolchildren and children of the preschool age were taken into account.

3.1. Belyayevka

Number of inhabitants - 412 persons. The village Belyayevka is situated in the territory with the ^{137}Cs contamination density of 5.39 Ci/km^2. External dose is of 0.68 mSv/a. Internal dose is of 0.30 mSv/a. Cumulative dose is of 0.98 mSv/a (the data from the Dose Catalogue 2004 were used).

Number of children at the school-kindergarten – 62.

The measurements took place in the village Belyayevka from December 2005 to January, 2006.

First radiological measurement was performed on 14.12.05. A total of performed measurements was 66 (51 children and 15 adults).

Table 2 - Group with maximal contents of radionuclide specific activity

No.	Surname	Name	Patronymic	Year of birth	Sp. activity, Bq/kg
1	SEMINAR	LARISA	LEONIDOVNA	1991	57.6
2	MARKEVICH	SERGEI	SERGEEVICH	1991	57.4
3	SAVENKO	MIHAIL	SERGEEVICH	1991	54.7
4	OSIPTSOV	IVAN	VLADIMIROVICH	2002	54.4
5	ROMANCHENKO	SERGEI	SERGEEVICH	1992	48.8
6	SEMENENKO	IRINA	NIKOLAEVNA	1999	48.8
7	ZAGORTSEV	DMITRII	SERGEEVICH	1995	47.5
8	MOROZ	ANDREI	SERGEEVICH	1994	46.0
9	GERASCHENKO	ANDREI	SERGEEVICH	2001	45.9
10	ATROSCHENKO	ARTEM	ALEKSANDROVICH	1999	44.4
11	GERASCHENKO	ALEKSEI	VIKTOROVICH	1995	44.4

12	MALASHKIN	FEDOR	GRIGOR'EVICH	1996	41.0
13	RALKOV	VASILII	NIKOLAEVICH	1990	40.3
14	TSERKOVNYUK	VERONIKA	VASIL'EVNA	1998	40.2
15	MALASHKINA	NATAL'YA	STEPANOVNA	1995	39.0

Average specific activity:

in the whole group: 31.6 ± 2.0 Bq/kg.

in the critical group: 47.4 ± 1.6 Bq/kg.

Internal exposure:

in the whole group: 0.09 mSv/a,

in the critical group (group of 15 persons having maximal specific activity contents): 0.14 mSv/a.

Cumulative dose in the whole group: 0.77 mSv/a.

Cumulative dose in the critical group: 0.82 mSv/a.

After performing the measurements 54 small boxes of the pectin preparation “Vitapect” were given to the school direction in order to perform the pectin cure of children.

Repeated radiological measurement (after performing pectin cures) was performed on 19.01.06 and 31.01.06. A total of performed measurements was 49 (42 children and 7 adults).

Table 3 - Group with maximal contents of radionuclide specific activity

No.	Surname	Name	Patronymic	Year of birth	Sp. activity, Bq/kg
1	SEMINAR	LARISA	LEONIDOVNA	2002	49.2
2	MARKEVICH	SERGEI	SERGEEVICH	1991	40.8
3	SAVENKO	MIHAIL	SERGEEVICH	1992	39.4
4	OSIPTSOV	IVAN	VLADIMIROVICH	1992	38.2
5	ROMANCHENKO	SERGEI	SERGEEVICH	1992	38.0
6	SEMENENKO	IRINA	NIKOLAEVNA	1996	34.4
7	ZAGORTSEV	DMITRII	SERGEEVICH	1991	34.2
8	MOROZ	ANDREI	SERGEEVICH	2001	32.2
9	GERASCHENKO	ANDREI	SERGEEVICH	2001	31.6
10	ATROSCHENKO	ARTEM	ALEKSANDROVICH	1998	29.9
11	GERASCHENKO	ALEKSEI	VIKTOROVICH	1992	29.5
12	MALASHKIN	FEDOR	GRIGOR'EVICH	1992	27.5
13	RALKOV	VASILII	NIKOLAEVICH	1994	26.8
14	TSERKOVNYUK	VERONIKA	VASIL'EVNA	1994	26.5
15	MALASHKINA	NATAL'YA	STEPANOVNA	1996	25.4

Average specific activity:

in the whole group: 22.1 ± 1.9 Bq/kg.

in the critical group: 33.6 ± 1.7 Bq/kg.

Internal exposure:

in the whole group: 0.06 mSv/a,

in the critical group: 0.09 mSv/a.

Cumulative dose in the whole group: 0.74 mSv/a.

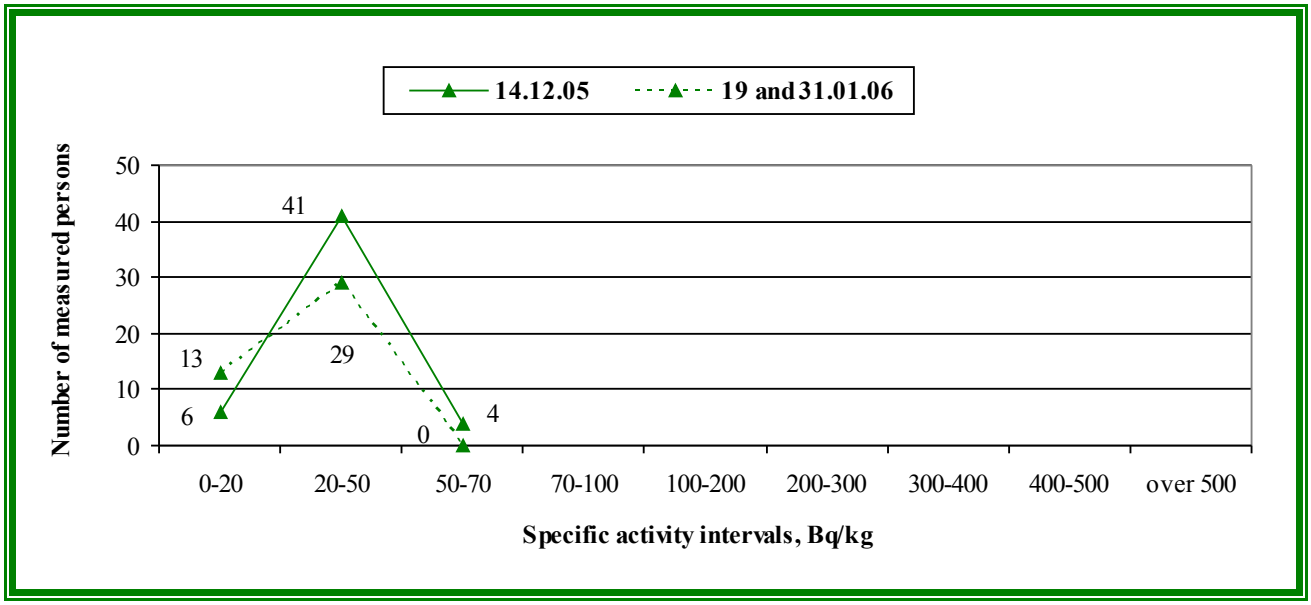
Cumulative dose in the critical group: 0.77 mSv/a.

The variation of the specific activity was calculated for the control group of children (39 persons) measured twice on 14.12.05 and 19-31.12.05 and taken the pectin preparation "Vitapect". **The average decrease of the specific activity reached to 26.4%.**

To demonstrate the effectiveness of the following work performed by the staff of the Institute "Belrad" under the Contract consisting in radiological measurements, pectin cures, explanations and information about the healthy life style and food in conditions of radioactive contamination the figure 1 is given below.

This figure demonstrates the dynamics of the variation of the radionuclides specific activity in all measured children in Belyayevka after 2 WBC measurements performed in framework of the Contract.

Figure 1 – Plot of the distribution of the interval specific activity of ^{137}Caesium in children in Belyayevka of Chechersk district of Gomel region in accordance with the results of measurements dated to December 14 and January 19 and 31, 2006



In the whole within the performance of radiation protection measures for the children in Belyayevka we managed to reach the decrease of the specific activity of ^{137}Caesium incorporated radionuclides in their organisms in **24.9%**, including the critical – in **29.1%**.

3.2. Voznesensky

Number of inhabitants - 416 persons. The village Voznesensky is situated in the territory with the ^{137}Cs contamination density of 6.25 Ci/km^2. External dose is of 0.82 mSv/a. Internal dose is of 1.50 mSv/a. Cumulative dose is of 2.32 mSv/a (the data from the Dose Catalogue 2004 were used).

Number of children at the school – 58, at the kindergarten – 12.

The measurements took place in the village Voznesensky from November to December, 2005.

First radiological measurement was performed on 30.11.05. A total of performed measurements was 86 (66 children and 20 adults).

Table 4 - Group with maximal contents of radionuclide specific activity

No.	Surname	Name	Patronymic	Year of birth	Sp. activity, Bq/kg
1	KRUPEN'KIN	SERGEI	SERGEEVICH	1990	197.2
2	PRIHOD'KO	VASILII	VIKTOROVICH	1989	152.9
3	KARPENKO	IVAN	VIKTOROVICH	1994	93.7

4	KARPENKO	NIKOLAI	VIKTOROVICH	1998	79.2
5	KARPENKO	GALINA	VIKTOROVNA	1991	74.3
6	KEBIKOVA	ANGELINA	VIKTOROVNA	2001	70.9
7	KOZAREZ	ANASTASIYA	VYACHESLAVOVNA	1996	55.4
8	BLAZUTSKII	ALEKSANDR	VIKTOROVICH	1991	54.5
9	STEPANOVA	SVETLANA	NIKOLAEVNA	1994	52.1
10	GULEVICH	VYACHESLAV	VYACHESLAVOVICH	1990	50.1
11	GULEVICH	ALEKSANDR	VYACHESLAVOVICH	1993	47.2
12	LETASHKOVA	ALINA	OLEGOVNA	1992	46.7
13	LAHMYTKIN	ANDREI	SERGEEVICH	1992	46.0
14	MASLOV	IL'YA	VIKTOROVICH	2000	43.0
15	KEBIKOV	VYACHESLAV	NIKOLAEVICH	1995	42.3

Average specific activity:

in the whole group: 29.3 ± 4.3 Bq/kg.

in the critical group: 73.7 ± 11.5 Bq/kg.

Internal exposure:

in the whole group: 0.08 mSv/a,

in the critical group: 0.21 mSv/a.

Cumulative dose in the whole group: 0.90 mSv/a.

Cumulative dose in the critical group: 1.03 mSv/a.

After performing the measurements 58 small boxes of the pectin preparation “Vitapect” were given to the school direction in order to perform the pectin cure of children.

Repeated radiological measurement (after performing pectin cures) was performed on 22.12.05. A total of performed measurements was 76 (64 children and 12 adults).

Table 5 - Group with maximal contents of radionuclide specific activity

No.	Surname	Name	Patronymic	Year of birth	Sp. activity, Bq/kg
1	PRIHOD'KO	VASILII	VLADIMIROVICH	1989	96.1
2	BLAZUTSKII	ALEKSANDR	VIKTOROVICH	1991	46.6
3	GULEVICH	VYACHESLAV	VYACHESLAVOVICH	1990	43.0
4	KARPENKO	GALINA	VIKTOROVNA	1991	42.1
5	KEBIKOVA	ANGELINA	VIKTOROVNA	2001	35.4
6	LAHMYTKIN	ANDREI	SERGEEVICH	1992	34.8
7	BELYAEV	VALERII	ALEKSANDROVICH	1994	31.3
8	PEVNEVA	TAT'YANA	PETROVNA	1991	30.9
9	MASTEPANOVA	SVETLANA	NIKOLAEVNA	1994	30.0
10	ANANENKO	ALEKSEI	OLEGOVICH	1992	28.4
11	KARPENKO	YURII	VIKTOROVICH	2001	26.9
12	KEBIKOV	VYACHESLAV	NIKOLAEVICH	1995	26.7
13	GULEVICH	ALEKSANDR	VYACHESLAVOVICH	1993	26.7
14	LETASHKOVA	ALINA	OLEGOVNA	1992	25.3

15	MASLOV	IVAN	PETROVICH	1996	24.8

Average specific activity:

in the whole group: 16.4 ± 2.0 Bq/kg.

in the critical group: 36.6 ± 4.6 Bq/kg.

Internal exposure:

in the whole group: 0.05 mSv/a,

in the critical group: 0.12 mSv/a.

Cumulative dose in the whole group: 0.87 mSv/a.

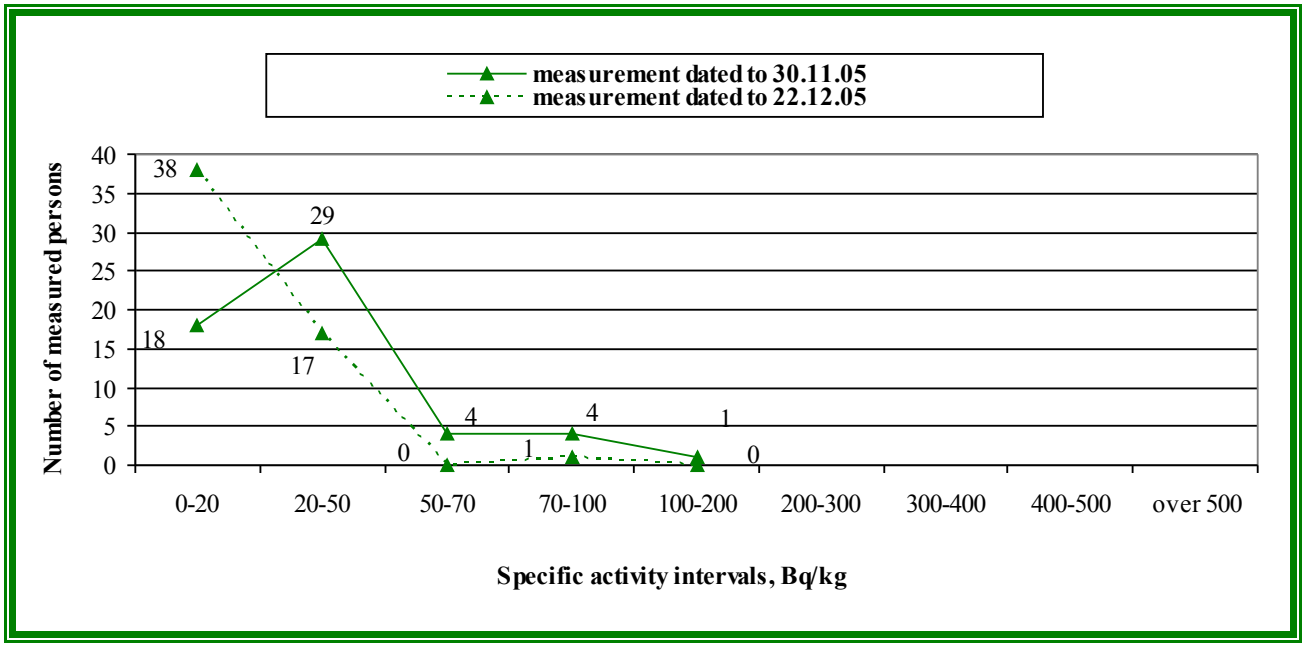
Cumulative dose in the critical group: 0.94 mSv/a.

The variation of the specific activity was calculated for the control group of children (56 persons) measured twice on 30.11.05 and 22.12.05 and taken the pectin preparation "Vitapect". **The average decrease of the specific activity reached to 45.7%.**

To demonstrate the effectiveness of the following work performed by the staff of the Institute "Belrad" under the Contract consisting in radiological measurements, pectin cures, explanations and information about the healthy life style and food in conditions of radioactive contamination the figure 2 is given below.

This figure demonstrates the dynamics of the variation of the radionuclides specific activity in all measured children in Voznesensky after 2 WBC measurements performed in framework of the Contract.

Figure 2 – Plot of the distribution of the interval specific activity of ^{137}Caesium in children in Voznesensky of Chechersk district of Gomel region in accordance with the results of measurements dated to November 30 and December 22, 2005



In the whole within the performance of radiation protection measures for the children in Voznesensky we managed to reach the decrease of the specific activity of ^{137}Caesium incorporated radionuclides in their organisms in **45.7%**, including the critical – in **54.4%**.

3.3. Zalesye

Number of inhabitants - 473 persons. The village Zalesye is situated in the territory with the ^{137}Cs contamination density of 9.66 Ci/km^2. External dose is of 1.27 mSv/a. Internal dose is of 1.10 mSv/a. Cumulative dose is of 2.37 mSv/a (the data from the Dose Catalogue 2004 were used).

Number of children at the school – 72, at the kindergarten – 27.

The measurements took place in the village Zalesye from November to December, 2005.

First radiological measurement was performed on 30.11.05. A total of performed measurements was 113 (94 children and 19 adults).

Table 6 - Group with maximal contents of radionuclide specific activity

No.	Surname	Name	Patronymic	Year of birth	Sp. activity, Bq/kg
1	HORKUNOVA	EKATERINA	MIHAILOVNA	1996	145.1
2	NIKITIN	SERGEI	VASIL'EVICH	1995	138.3
3	KUZNETSOVA	TAT'YANA	STANISLAVOVNA	1994	114.9
4	NIKITIN	ALEKSEI	VASIL'EVICH	1992	103.2
5	TSELKOVIKOV	STANISLAV	STANISLAVOVICH	1997	98.7
6	AKINSHA	ALEKSANDR	SERGEEVICH	1997	89.1
7	KALININ	MIHAIL	MIHAILOVICH	1995	85.8
8	AKINSHA	NIKOLAI	SERGEEVICH	2000	83.4
9	KONUHOVA	OL'GA	VLADIMIROVNA	1990	75.0
10	AKINSHA	VASILII	SERGEEVICH	2001	59.8
11	SOBOL'	INNA	IGOREVNA	1990	59.6
12	ONOPRIENKO	VIKTORIYA	VIKTOROVNA	2001	59.2
13	PIS'MENNIKOV	LEONID	ALEKSANDROVICH	2000	58.5
14	ONOPRIENKO	PAVEL	VIKTOROVICH	1988	52.1
15	NIKITINA	ELENA	VASIL'EVNA	1996	52.0

Average specific activity:

in the whole group: 35.6 ± 2.8 Bq/kg.

in the critical group: 85.0 ± 7.8 Bq/kg.

Internal exposure:

in the whole group: 0.10 mSv/a,

in the critical group: 0.23 mSv/a.

Cumulative dose in the whole group: 1.37 mSv/a.

Cumulative dose in the critical group: 1.50 mSv/a.

After performing the measurements 72 small boxes of the pectin preparation “Vitapect” were given to the school direction in order to perform the pectin cure of children.

Repeated radiological measurement (after performing pectin cures) was performed on 22.12.05. A total of performed measurements was 57 (52 children and 5 adults).

Table 7 - Group with maximal contents of radionuclide specific activity

No.	Surname	Name	Patronymic	Year of birth	Sp. activity, Bq/kg
1	AKINSHA	ALEKSANDR	SERGEEVICH	1997	129.6
2	HORKUNOVA	EKATERINA	MIHAILOVNA	1996	108.2
3	NIKITIN	SERGEI	VASIL'EVICH	1995	88.4
4	KUZNETSOVA	TAT'YANA	STANISLAVOVNA	1994	81.0
5	KALININ	MIHAIL	MIHAILOVICH	1995	46.8
6	KOVALEV	IL'YA	ALEKSANDROVIC	1999	46.3

			H		
7	TSELKOVIKOV	STANISLAV	STANISLAVOVICH	1997	40.8
8	SOBOL'	INNA	IGOREVNA	1990	37.4
9	KONUHOVA	OL'GA	VLADIMIROVNA	1990	36.2
10	PEVNEVA	NATAL'YA	MIHAILOVNA	1991	30.7
11	ZAGORTSEV	ARTEM	NIKOLAEVICH	1991	30.6
12	MOROZOV	NIKOLAI	SERGEEVICH	1998	28.6
13	TARASENKO	ALEKSANDR	MIHAILOVICH	1991	26.9
14	SEMENCHENKO	VIKTOR	PETROVICH	1996	26.3
15	NIKITINA	ELENA	VASIL'EVNA	1996	25.2

Average specific activity:

in the whole group: 22.8 ± 3.7 Bq/kg.

in the critical group: 52.2 ± 8.6 Bq/kg.

Internal exposure:

in the whole group: 0.06 mSv/a,

in the critical group: 0.14 mSv/a.

Cumulative dose in the whole group: 1.33 mSv/a.

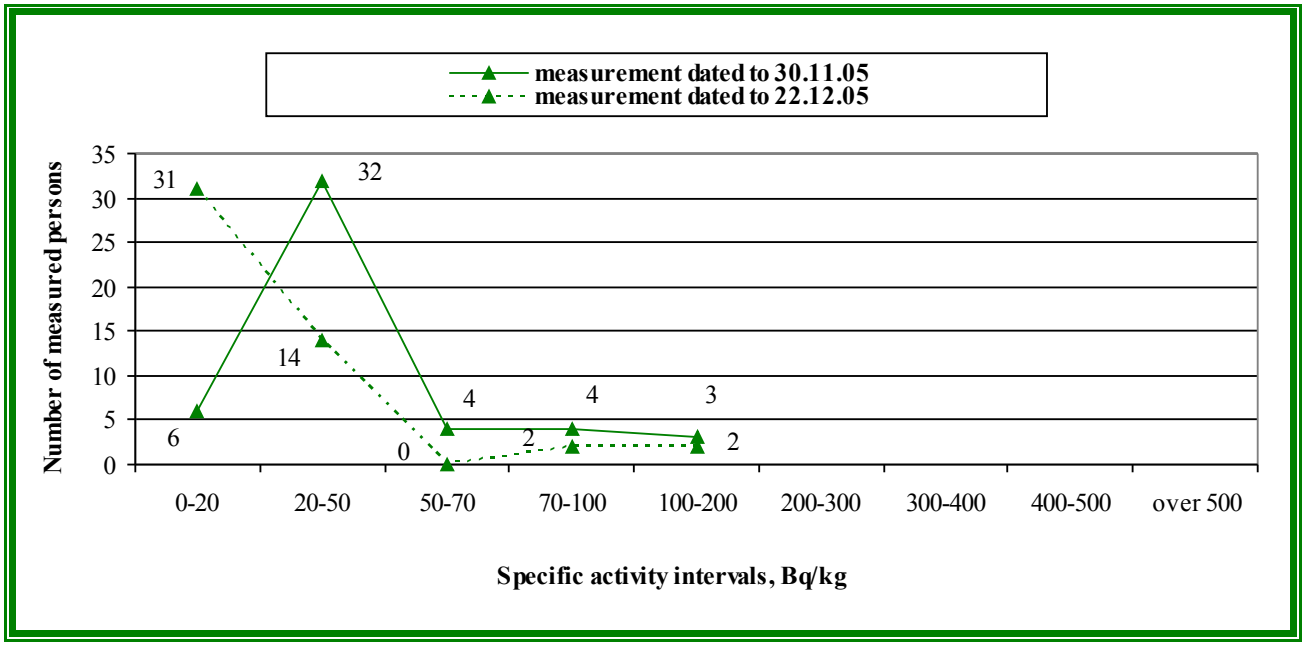
Cumulative dose in the critical group: 1.41 mSv/a.

The variation of the specific activity was calculated for the control group of children (49 persons) measured twice on 30.11.05 and 22.12.05 and taken the pectin preparation "Vitapect". **The average decrease of the specific activity reached to 40.7%.**

To demonstrate the effectiveness of the following work performed by the staff of the Institute "Belrad" under the Contract consisting in radiological measurements, pectin cures, explanations and information about the healthy life style and food in conditions of radioactive contamination the figure 3 is given below.

This figure demonstrates the dynamics of the variation of the radionuclides specific activity in all measured children in Zalesye after 2 WBC measurements performed in framework of the Contract.

Figure 3 - Plot of the distribution of the interval specific activity of ^{137}Caesium in children in Zalesye of Chechersk district of Gomel region in accordance with the results of measurements dated to November 30 and December 22, 2005.



In the whole within the performance of radiation protection measures for the children in Zalesye we managed to reach the decrease of the specific activity of ^{137}Caesium incorporated radionuclides in their organisms in **40.7%**, including the critical – in **38.3%**.

3.4. Merkulovichi

Number of inhabitants - 584 persons. The village Merkulovichi is situated in the territory with the ^{137}Cs contamination density of 4.39 Ci/km^2. External dose is of 0.58 mSv/a. Internal dose is of 0.20 mSv/a. Cumulative dose is of 0.78 mSv/a (the data from the Dose Catalogue 2004 were used).

Number of children at the school – 162, at the kindergarten – 36.

The measurements took place in the village Merkulovichi in December, 2005.

First radiological measurement was performed on 01.12.05. A total of performed measurements was 178 (155 children and 23 adults).

Table 8 - Group with maximal contents of radionuclide specific activity

No.	Surname	Name	Patronymic	Year of birth	Sp. activity, Bq/kg
1	HURBATOV	NIKOLAI	VLADIMIROVICH	1989	54.7
2	VINOKUROV	ALEKSANDR	VIKTOROVICH	2001	49.7
3	DEMIDOVA	TAT'YANA	VLADIMIROVNA	2000	49.4
4	YURCHENKO	ANASTASIYA	NIKOLAEVNA	2001	47.8
5	PUZYRINA	VALENTINA	GENNAD'EVNA	2000	45.2
6	ZAHARCHUK	EKATERINA	VIKTOROVNA	1994	45.2
7	ELISEEV	GRIGORII	SERGEEVICH	1989	44.3
8	GERASECHKIN	RUSLAN	MIHAILOVICH	1994	41.8
9	KONOPLYANNIKOV	ANASTASIYA	VLADIMIROVNA	1995	41.4
10	SHVYDENKO	OKSANA	SERGEEVNA	1995	41.1
11	PISARENKO	ANASTASIYA	VLADIMIROVNA	1989	41.1
12	MAKEEV	NIKOLAI	SERGEEVICH	1989	39.9
13	IZOTOV	VIKTOR	IVANOVICH	1990	39.1
14	GAPICH	EVGENII	VIKTOROVICH	2001	38.1
15	ANDREICHIKOVA	LINDA	DMITRIEVNA	1995	37.9

Average specific activity:
in the whole group: 23.6 ± 0.9 Bq/kg.
in the critical group: 43.8 ± 1.3 Bq/kg.
Internal exposure:
in the whole group: 0.07 mSv/a,
in the critical group: 0.11 mSv/a.
Cumulative dose in the whole group: 0.65 mSv/a.
Cumulative dose in the critical group: 0.69 mSv/a.

After performing the measurements 162 small boxes of the pectin preparation “Vitapect” were given to the school direction in order to perform the pectin cure of children.

Repeated radiological measurement (after performing pectin cures) was performed on 21.12.05. A total of performed measurements was 118 (116 children and 2 adults).

Table 9 - Group with maximal contents of radionuclide specific activity

No.	Surname	Name	Patronymic	Year of birth	Sp. activity, Bq/kg
1	ELISEEV	GRIGORII	SERGEEVICH	1989	39.4
2	KOROTKEVICH	ALEKSANDR	VIKTOROVICH	1990	33.0
3	VYRVA	MAKSIM	VLADIMIROVICH	1989	32.7
4	PISARENKO	ANNA	LEONIDOVNA	1996	31.7
5	GERASECHKIN	RUSLAN	MIHAILOVICH	1994	30.2
6	KOVALEVA	IRINA	VASIL'EVNA	1993	29.7
7	DEMIDOVA	INNA	ARKAD'EVNA	1991	28.4
8	DOROSHKEVICH	YULIYA	SERGEEVNA	1992	27.8
9	YURCHENKO	ALEKSEI	NIKOLAEVICH	1993	27.4
10	OGOL'	NIKOLAI	STANISLAVOVICH	1993	27.3
11	SHPORT	VALERIYA	ALEKSANDROVNA	1994	26.9
12	PISARENKO	VITALII	VASIL'EVICH	1994	25.7
13	KONOPLYANNIKOV	ANASTASIYA	VLADIMIROVNA	1995	25.0
14	ZAHARCHUK	EKATERINA	VIKTOROVNA	1994	24.6
15	TITOV	ROMAN	STANISLAVOVICH	1997	24.4

Average specific activity:

in the whole group: 16.5 ± 0.7 Bq/kg.

in the critical group: 28.9 ± 1.0 Bq/kg.

Internal exposure:

in the whole group: 0.05 mSv/a,

in the critical group: 0.09 mSv/a.

Cumulative dose in the whole group: 0.63 mSv/a.

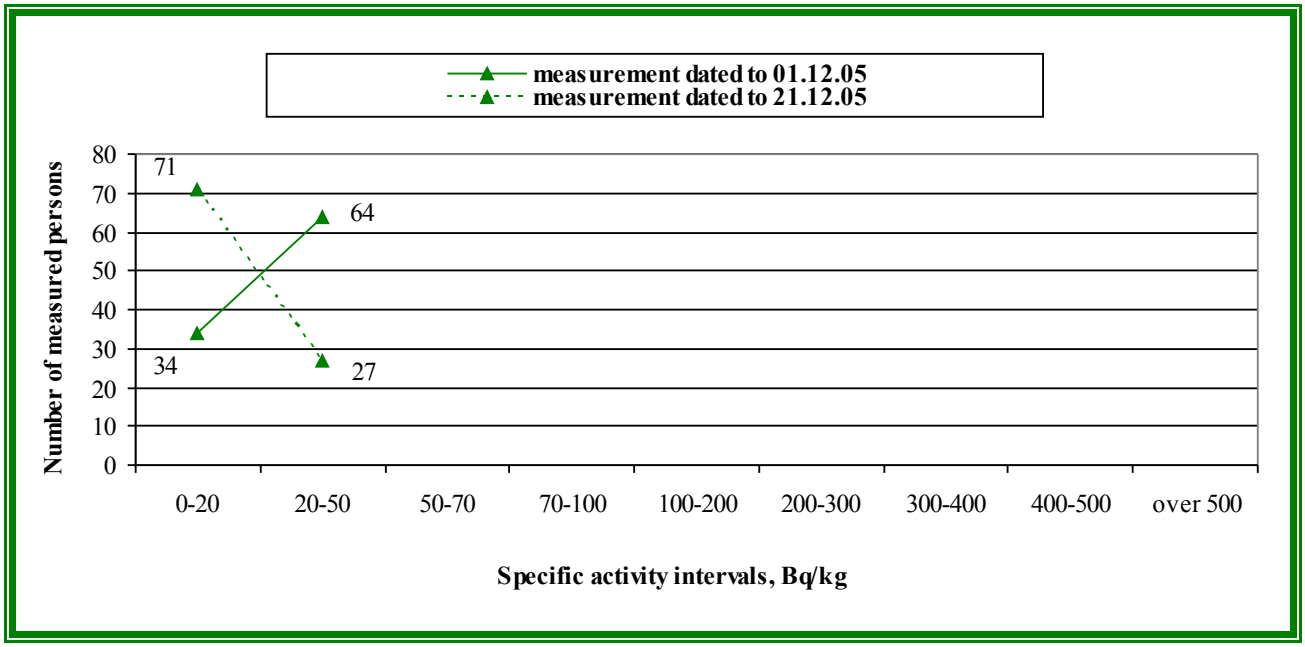
Cumulative dose in the critical group: 0.67 mSv/a.

The variation of the specific activity was calculated for the control group of children (98 persons) measured twice on 01.12.05 and 21.12.05 and taken the pectin preparation “Vitapect”. **The average decrease of the specific activity reached to 30.5%.**

To demonstrate the effectiveness of the following work performed by the staff of the Institute “Belrad” under the Contract consisting in radiological measurements, pectin cures, explanations and information about the healthy life style and food in conditions of radioactive contamination the figure 4 is given below.

This figure demonstrates the dynamics of the variation of the radionuclides specific activity in all measured children in Merkulovichi after 2 WBC measurements performed in framework of the Contract.

Figure 4 - Plot of the distribution of the interval specific activity of ^{137}Caesium in children in Merkulovichi of Chechersk district of Gomel region in accordance with the results of measurements dated to December 01 and December 21, 2005



In the whole within the performance of radiation protection measures for the children in Merkulovichi we managed to reach the decrease of the specific activity of ^{137}Caesium incorporated radionuclides in their organisms in **30.5%**, including the critical – in **34.0%**.

3.5. Motnevichi

Number of inhabitants - 393 persons. The village Motnevichi is situated in the territory with the ^{137}Cs contamination density of 5.34 Ci/km^2. External dose is of 0.68 mSv/a. Internal dose is of 0.80 mSv/a. Cumulative dose is of 1.48 mSv/a (the data from the Dose Catalogue 2004 were used).

Number of children at the school – 71, at the kindergarten – 15.

The measurements took place in the village Motnevichi in December, 2005.

First radiological measurement was performed on 01.12.05. A total of performed measurements was 106 (85 children and 21 adults).

Table 10 - Group with maximal contents of radionuclide specific activity

No.	Surname	Name	Patronymic	Year of birth	Sp. activity, Bq/kg
1	MEL'NIKOV	ALEKSANDR	VALER'EVICH	1994	83.1
2	KOZHEMYAKIN	EVGENII	NIKOLAEVICH	1991	79.4
3	PANTELEENKO	LEONID	ALEKSANDROVICH	1991	75.5
4	BULYBENKO	SERGEI	ALEKSANDROVICH	1993	74.0
5	LEDNEV	EVGENII	VASIL'EVICH	1991	72.9
6	POTAPENKO	MIHAIL	NIKOLAEVICH	1990	68.8
7	POTAPENKO	NIKOLAI	LEONIDOVICH	1996	63.7
8	POTAPENKO	EKATERINA	VYACHESLAVOVNA	1996	62.8
9	KOZHEMYAKIN	SERGEI	ALEKSEEVICH	1995	62.2
10	ABROSIMOV	VLADISLAV	IVANOVICH	2002	61.8

11	LEDNEVA	YULIYA	SERGEEVNA	1995	61.6
12	BOLYBENKO	VIKTORIYA	ALEKSANDROVNA	1990	59.3
13	SERIKOVA	MARIYA	ALEKSANDROVNA	2001	59.2
14	KOZHEMYAKINA	KLAVDIYA	NIKOLAEVNA	1996	56.3
15	HOMCHENKO	MIHAIL	ANATOL'EVICH	1992	56.3

Average specific activity:
in the whole group: 41.7 ± 1.8 Bq/kg.
in the critical group: 66.5 ± 2.2 Bq/kg.
Internal exposure:
in the whole group: 0.12 mSv/a,
in the critical group: 0.21 mSv/a.
Cumulative dose in the whole group: 0.80 mSv/a.
Cumulative dose in the critical group: 0.89 mSv/a.

After performing the measurements 71 small boxes of the pectin preparation “Vitapect” were given to the school direction in order to perform the pectin cure of children.

Repeated radiological measurement (after performing pectin cures) was performed on 21.12.05 and 22.12.05. A total of performed measurements was 85 (80 children and 5 adults).

Table 11 - Group with maximal contents of radionuclide specific activity

No.	Surname	Name	Patronymic	Year of birth	Sp. activity, Bq/kg
1	LEDNEV	EVGENII	VASIL'EVICH	1991	69.8
2	KOZHEMYAKINA	KLAVDIYA	NIKOLAEVNA	1996	52.0
3	POTAPENKO	EKATERINA	VYACHESLAVOVNA	1996	50.2
4	KORNEEVETS	SERGEI	NIKOLAEVICH	2002	47.0
5	POTAPENKO	MIHAIL	NIKOLAEVICH	1990	44.8
6	KOZHEMYAKIN	EVGENII	NIKOLAEVICH	1991	44.3
7	MEL'NIKOV	ALEKSANDR	VALER'EVICH	1994	42.9
8	BULYBENKO	VIKTORIYA	ALEKSANDROVNA	1990	42.6
9	CHVIROVA	KRISTINA	PETROVNA	2001	42.0
10	PANASENKO	TAT'YANA	ALEKSEEVNA	2002	41.8
11	ABROSIMOV	VLADISLAV	IVANOVICH	2002	40.4
12	KOZHEMYAKINA	ELENA	ALEKSEEVNA	1994	38.7
13	HURBATOV	VLADIMIR	NIKOLAEVICH	2000	38.1
14	POTAPENKO	ALEKSANDRA	VYACHESLAVOVNA	1998	35.8
15	PODENKOV	ANDREI	NIKOLAEVICH	1998	35.6

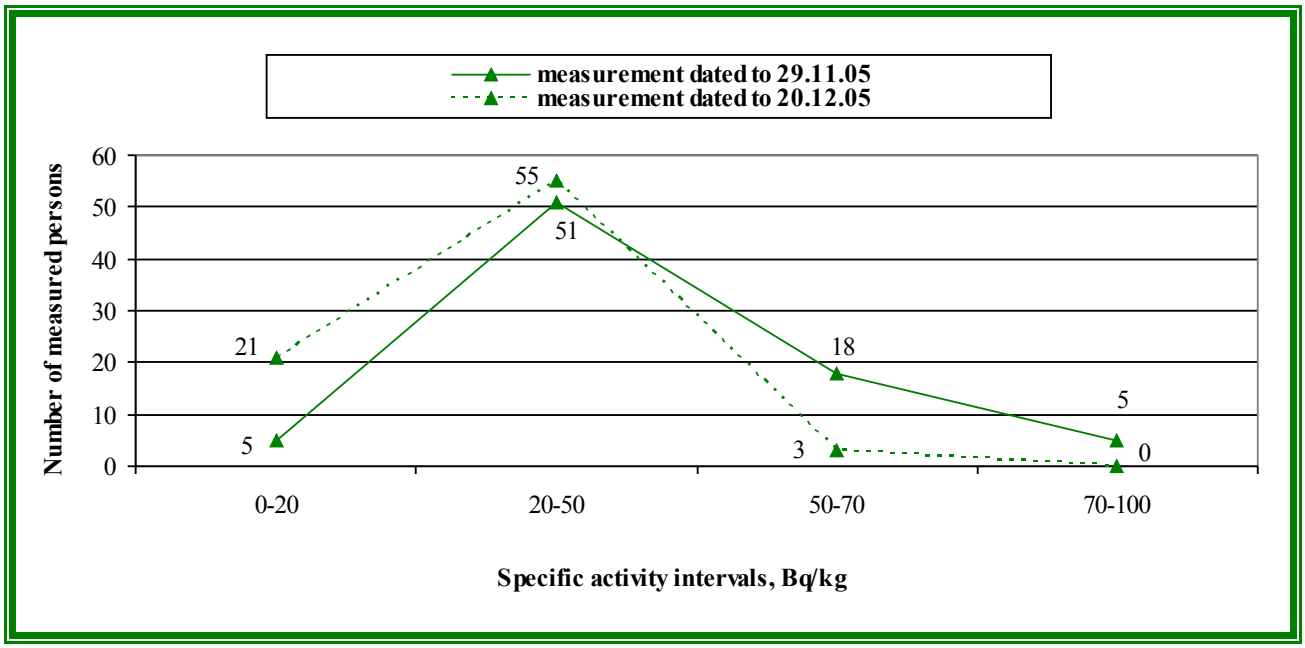
Average specific activity:
in the whole group: 26.1 ± 1.5 Bq/kg.
in the critical group: 44.4 ± 2.2 Bq/kg.
Internal exposure:
in the whole group: 0.08 mSv/a,
in the critical group: 0.13 mSv/a.
Cumulative dose in the whole group: 0.76 mSv/a.
Cumulative dose in the critical group: 0.81 mSv/a.

The variation of the specific activity was calculated for the control group of children (79 persons) measured twice on 01.12.05 and 21.-22.12.05 and taken the pectin preparation "Vitapect". **The average decrease of the specific activity reached to 38.2%.**

To demonstrate the effectiveness of the following work performed by the staff of the Institute "Belrad" under the Contract consisting in radiological measurements, pectin cures, explanations and information about the healthy life style and food in conditions of radioactive contamination the figure 5 is given below.

This figure demonstrates the dynamics of the variation of the radionuclides specific activity in all measured children in Motnevichi after 2 WBC measurements performed in framework of the Contract.

Figure 5 - Plot of the distribution of the interval specific activity of ^{137}Caesium in children in Motnevichi of Chechersk district of Gomel region in accordance with the results of measurements dated to December 01 and December 21-22, 2005



In the whole within the performance of radiation protection measures for the children in Motnevichi we managed to reach the decrease of the specific activity of ^{137}Caesium incorporated radionuclides in their organisms in **38.2%**, including the critical – in **33.2%**.

3.6. Nisimkovichi

Number of inhabitants - 339 persons. The village Nisimkovichi is situated in the territory with the ^{137}Cs contamination density of 19.38 Ci/km^2. External dose is of 0.72 mSv/a. Internal dose is of 1.20 mSv/a. Cumulative dose is of 1.92 mSv/a (the data from the Dose Catalogue 2004 were used).

Number of children at the school-kindergarten – 69.

The measurements took place in the village Nisimkovichi from November to December, 2005.

First radiological measurement was performed on 30.11.05. A total of performed measurements was 83 (66 children and 17 adults).

Table 12 - Group with maximal contents of radionuclide specific activity

No.	Surname	Name	Patronymic	Year of birth	Sp. activity, Bq/kg

1	POKUSOV	NIKOLAI	NIKOLAEVICH	1990	173.6
2	IVASHKOV	EVGENII	PETROVICH	1994	105.5
3	DEREVYASHKIN	EVGENII	ANDREEVICH	1994	88.1
4	IVASHKOV	VIKTOR	PETROVICH	1999	56.6
5	NOVOSELOV	DENIS	VIKTOROVICH	2003	54.5
6	SAPRYKO	IRINA	VYACHESLAVOVNA	1991	52.7
7	DEREVYASHKIN	DMITRII	ANDREEVICH	1992	52.4
8	POKUSOV	ARTEM	IVANOVICH	2000	51.5
9	TURMASOV	VLADIMIR	ALEKSANDROVICH	1988	51.4
10	POKUSOVA	VIKTORIYA	IVANOVNA	1997	44.5
11	KLIMENKOVA	EKATERINA	VLADIMIROVNA	1990	44.0
12	USANOV	DENIS	ALEKSEEVICH	1987	44.0
13	IVASHKOV	NIKOLAI	ALEKSANDROVICH	1998	43.5
14	KLIMENKOV	VIKTOR	LEONIDOVICH	1993	41.3
15	VASILENKO	NIKOLAI	NIKOLAEVICH	1999	36.8

Average specific activity:

in the whole group: 32.5 ± 3.1 Bq/kg.

in the critical group: 62.7 ± 9.2 Bq/kg.

Internal exposure:

in the whole group: 0.09 mSv/a,

in the critical group: 0.17 mSv/a.

Cumulative dose in the whole group: 0.81 mSv/a.

Cumulative dose in the critical group: 0.89 mSv/a.

After performing the measurements 60 small boxes of the pectin preparation “Vitapect” were given to the school direction in order to perform the pectin cure of children.

Repeated radiological measurement (after performing pectin cures) was performed on 21.12.05. A total of performed measurements was 71 (61 children and 10 adults).

Table 13 - Group with maximal contents of radionuclide specific activity

No.	Surname	Name	Patronymic	Year of birth	Sp. activity, Bq/kg
1	POKUSOV	NIKOLAI	NIKOLAEVICH	1990	137.8
2	IVASHKOV	EVGENII	PETROVICH	1994	100.2
3	DEREVYASHKIN	EVGENII	ANDREEVICH	1994	70.1
4	KLIMENKOV	VIKTOR	LEONIDOVICH	1993	59.2
5	IVASHKOV	VIKTOR	PETROVICH	1999	48.1
6	TURMASOV	VLADIMIR	ALEKSANDROVICH	1988	48.0
7	KONDRIKOV	IGOR'	ANDREEVICH	1993	45.6
8	USANOV	DENIS	ALEKSEEVICH	1987	39.6
9	KLIMENKOVA	EKATERINA	VLADIMIROVNA	1990	39.1
10	KLIMENKOV	DMITRII	VLADIMIROVICH	1991	39.0
11	GULEVICH	OL'GA	IGOREVNA	1999	37.5
12	GULEVICH	IGOR'	ALEKSANDROVICH	1988	37.5

13	ISACHENKO	TAT'YANA	VLADIMIROVNA	1996	37.3
14	SELYUKOVA	ALINA	NIKOLAEVNA	1995	36.3
15	FASTOV	ALEKSANDR	VIKTOROVICH	1998	36.2

Average specific activity:

in the whole group: 29.9 ± 2.8 Bq/kg.

in the critical group: 54.1 ± 7.5 Bq/kg.

Internal exposure:

in the whole group: 0.08 mSv/a,

in the critical group: 0.15 mSv/a.

Cumulative dose in the whole group: 0.80 mSv/a.

Cumulative dose in the critical group: 0.87 mSv/a.

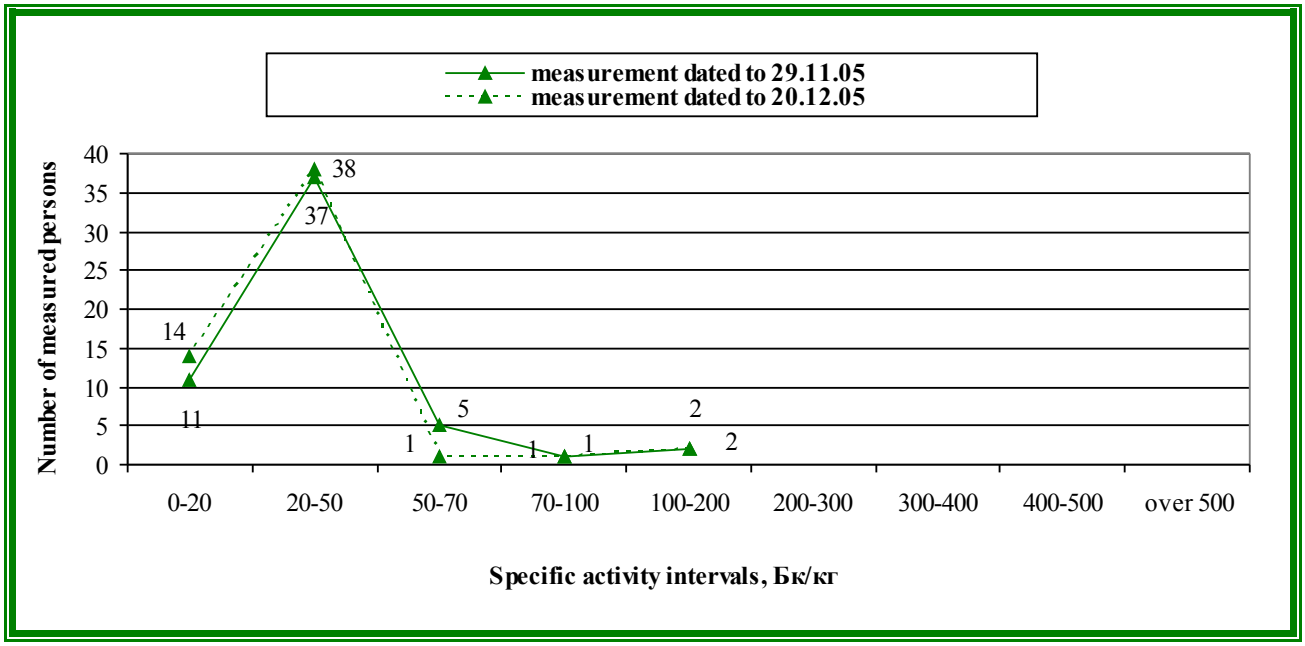
The variation of the specific activity was calculated for the control group of children (56 persons) measured twice on 30.11.05 and 21.12.05 and taken the pectin preparation "Vitapect". **The average decrease of the specific activity reached to 9.1%.**

To demonstrate the effectiveness of the following work performed by the staff of the Institute "Belrad" under the Contract consisting in radiological measurements, pectin cures, explanations and information about the healthy life style and food in conditions of radioactive contamination the figure 6 is given below.

This figure demonstrates the dynamics of the variation of the radionuclides specific activity in all measured children in Nisimkovichi after 2 WBC measurements performed in framework of the Contract.

Figure 6 - Plot of the distribution of the interval specific activity of ^{137}Caesium in children in Nisimkovichi of Chechersk district of Gomel region in accordance with the results of measurements dated to November 30 and December 21, 2005.

In the whole within the performance of radiation protection measures for the children in



Nisimkovichi we managed to reach the decrease of the specific activity of ^{137}Caesium incorporated radionuclides in their organisms in **9.1%**, including the critical – in **13.7%**.

3.7. Polesye

Number of inhabitants - 522 persons. The village Polesye is situated in the territory with the ^{137}Cs contamination density of 5.02 Ci/km^2. External dose is of 0.65 mSv/a. Internal dose is of 0.70 mSv/a. Cumulative dose is of 1.35 mSv/a (the data from the Dose Catalogue 2004 were used).

Number of children at the school – 110, at the kindergarten – 16.

The measurements took place in the village Polesye from November to December, 2005.

First radiological measurement was performed on 29.11.05. A total of performed measurements was 126 (116 children and 10 adults).

Table 14 - Group with maximal contents of radionuclide specific activity

No.	Surname	Name	Patronymic	Year of birth	Sp. activity, Bq/kg
1	LASYI	ALEKSANDR	NIKOLAEVICH	1991	1064.2
2	POLENOK	SERGEI	NIKOLAEVICH	1993	626.8
3	YURCHENKO	ALEKSANDR	ALEKSANDROVICH	1993	441.8
4	SHIROKII	ALEKSANDR	PAVLOVICH	1989	382.2
5	ROMANENKO	TAT'YANA	SERGEEVNA	1992	286.2
6	BOLSUN	ALEKSANDR	LEONIDOVICH	1989	217.4
7	MEL'NIK	VIKTOR	ALEKSANDROVICH	1995	217.1
8	SHIROKAYA	MARINA	PAVLOVNA	1991	214.9
9	GEVRASEV	ANDREI	ANATOL'EVICH	1995	204.4
10	POLENOK	ALEKSEI	VALER'EVICH	1994	203.2
11	GEVRASEVA	INNA	ANATOL'EVNA	1998	197.4
12	BOLSUN	YULIYA	LEONIDOVNA	1992	156.8
13	SMIRNOV	NIKOLAI	YUR'EVICH	1990	127.9
14	YURCHENKO	YURII	VASIL'EVICH	1990	117.6
15	MININA	MARIYA	EVGEN'EVNA	1990	115.1

Average specific activity:
in the whole group: 75.1 ± 11.8 Bq/kg.
in the critical group: 304.9 ± 64.9 Bq/kg.
Internal exposure:
in the whole group: 0.23 mSv/a,
in the critical group: 0.89 mSv/a.
Cumulative dose in the whole group: 0.88 mSv/a.
Cumulative dose in the critical group: 1.54 mSv/a.

After performing the measurements 110 small boxes of the pectin preparation “Vitapect” were given to the school direction in order to perform the pectin cure of children.

Repeated radiological measurement (after performing pectin cures) was performed on 20.12.05. A total of performed measurements was 117 (110 children and 7 adults).

Table 15 - Group with maximal contents of radionuclide specific activity

No.	Surname	Name	Patronymic	Year of birth	Sp. activity, Bq/kg
1	POLENOK	SERGEI	NIKOLAEVICH	1993	676.5
2	YURCHENKO	ALEKSANDR	ALEKSANDROVICH	1993	352.7
3	ROMANENKO	TAT'YANA	SERGEEVNA	1992	225.2
4	POLENOK	ALEKSEI	VALER'EVICH	1994	189.9

5	GEVRASEVA	INNA	ANATOL'EVNA	1998	175.5
6	MEL'NIK	VIKTOR	ALEKSANDROVICH	1995	165.0
7	BOLSUN	YULIYA	LEONIDOVNA	1992	132.2
8	MININA	MARIYA	EVGEN'EVNA	1990	107.7
9	YURCHENKO	ANASTASIYA	ALEKSANDROVNA	1998	95.0
10	GEVRASEVA	ELENA	LEONIDOVNA	1991	94.0
11	DUDKINA	TAT'YANA	PETROVNA	1994	93.3
12	BOLSUN	ALEKSANDR	NIKOLAEVICH	1989	75.9
13	NAHAEVA	TAT'YANA	VLADIMIROVNA	1991	70.1
14	LASHKINA	MARIYA	ALEKSEEVNA	1999	57.6
15	BOLSUN	VIKTOR	VASIL'EVICH	1995	53.3

Average specific activity:

in the whole group: 48.3 ± 7.3 Bq/kg.

in the critical group: 170.9 ± 41.5 Bq/kg.

Internal exposure:

in the whole group: 0.14 mSv/a,

in the critical group: 0.49 mSv/a.

Cumulative dose in the whole group: 0.79 mSv/a.

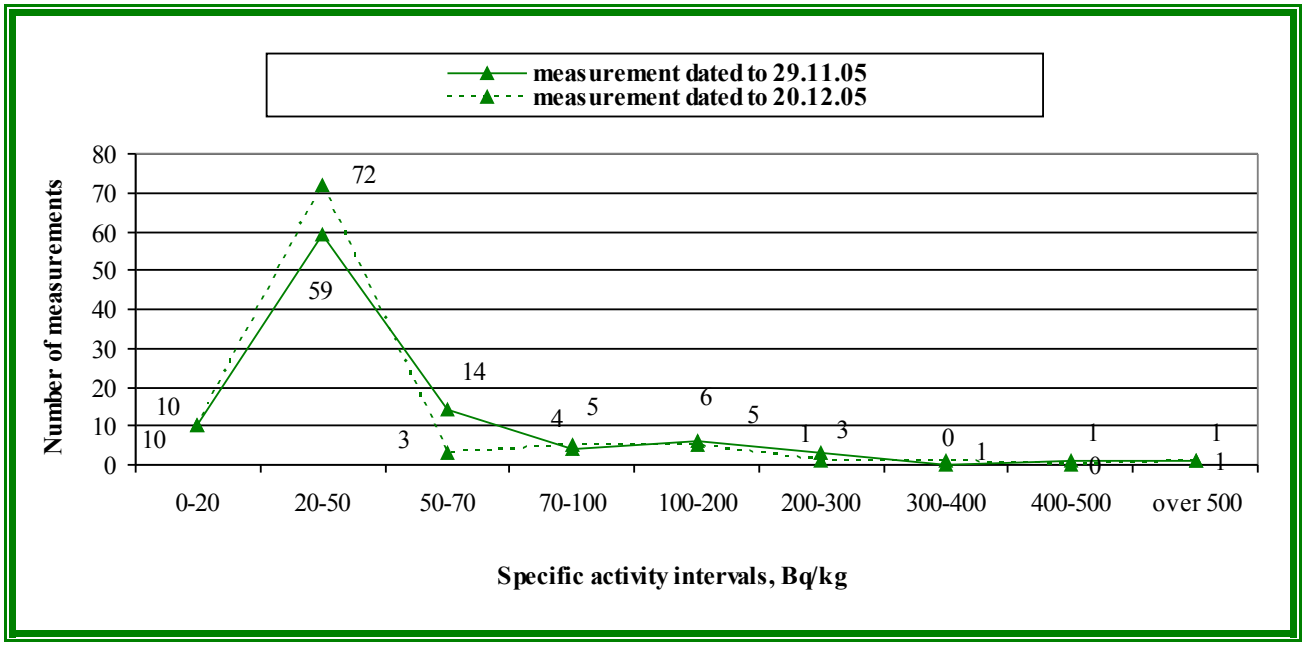
Cumulative dose in the critical group: 1.14 mSv/a.

The variation of the specific activity was calculated for the control group of children (98 persons) measured twice on 29.11.05 and 20.12.05 and taken the pectin preparation "Vitapect". **The average decrease of the specific activity reached to 14.6%.**

To demonstrate the effectiveness of the following work performed by the staff of the Institute "Belrad" under the Contract consisting in radiological measurements, pectin cures, explanations and information about the healthy life style and food in conditions of radioactive contamination the figure 7 is given below.

This figure demonstrates the dynamics of the variation of the radionuclides specific activity in all measured children in Polesye after 2 WBC measurements performed in framework of the Contract.

Figure 7 - Plot of the distribution of the interval specific activity of ^{137}Caesium in children in Polesye of Chechersk district of Gomel region in accordance with the results of measurements dated to November 29 and December 20, 2005.



In the whole within the performance of radiation protection measures for the children in Polesye we managed to reach the decrease of the specific activity of ^{137}Caesium incorporated radionuclides in their organisms in **14.6%**, including the critical – in **49.9%**.

3.8. Svetilovichi

Number of inhabitants - 1042 persons. The village Svetilovichi is situated in the territory with the ^{137}Cs contamination density of 19.38 Ci/km^2. External dose is of 2.53 mSv/a. Internal dose is of 1.90 mSv/a. Cumulative dose is of 4.43 mSv/a (the data from the Dose Catalogue 2004 were used).

Number of pupils at school – 155, of children at the kindergarten – 49.

The measurements were performed in the village Svetilovichi from November to December 2005.

First radiological measurement was performed on 29.11.05. A total of performed measurements was 205 (186 children and 19 adults).

Table 16 – Group with maximal contents of radionuclide specific activity

No.	Surname	Name	Patronymic	Year of birth	Sp. activity, Bq/kg
1	CHUBINETS	VASILII	PETROVICH	1992	242.7
2	CHUBINETS	ALEKSANDRA	PETROVNA	1995	217.7
3	SHENDEROVA	OL'GA	ALEKSANDROVNA	1991	150.4
4	GATAL'SKAYA	EKATERINA	VLADIMIROVNA	1990	128.1
5	MAKARENKO	VALENTINA	MIHAILOVNA	1994	121.2
6	SHINKAREV	ALEKSANDR	VLADIMIROVICH	1990	114.1
7	KOLOSOV	SERGEI	VASIL'EVICH	1992	109.5
8	LAPITSKII	SERGEI	ALEKSANDROVICH	1988	109.2
9	KOLOSOVA	SVETLANA	VASIL'EVNA	1993	104.6
10	KASHKIN	ALEKSANDR	ALEKSEEVICH	1995	98.3
11	ALEKSEEVA	IRINA	NIKOLAEVNA	1991	96.2
12	NERUSHEVA	TAT'YANA	VLADIMIROVNA	1990	95.1
13	KLIMANSKII	VIKTOR	NIKOLAEVICH	1993	94.9
14	VOLKOV	ARTEM	VLADIMIROVICH	1990	94.9
15	SHINKAREVA	IRINA	VLADIMIROVNA	1992	90.6

Average specific activity:

in the whole group: 42.5 ± 2.3 Bq/kg.

in the critical group: 124.5 ± 11.9 Bq/kg.

Internal exposure:

in the whole group: 0.12 mSv/a,

in the critical group: 0.35 mSv/a.

Cumulative dose in the whole group: 2.65 mSv/a.

Cumulative dose in the critical group: 2.88 mSv/a.

After performing the measurements 160 small boxes of the pectin preparation “Vitapect” were given to the school direction in order to perform the pectin cure of children.

Repeated radiological measurement (after performing pectin cures) was performed on 20.12.05. A total of performed measurements was 129 (120 children and 9 adults).

Table 17 - Group with maximal contents of radionuclide specific activity

No.	Surname	Name	Patronymic	Year of birth	Sp. activity, Bq/kg
1	SHENDEROVA	OL'GA	ALEKSANDROVNA	1991	110.5
2	GATAL'SKAYA	EKATERINA	VLADIMIROVNA	1990	102.0
3	CHUBINETS	ALEKSANDRA	PETROVNA	1995	93.0

4	KUPRIENKO	OLEG	VASIL'EVICH	1992	92.1
5	MAKARENKO	VALENTINA	MIHAILOVNA	1994	91.8
6	GALKIN	ALEKSANDR	ALEKSANDROVICH	1987	86.4
7	GONCHAROV	SERGEI	VLADIMIROVICH	1992	79.9
8	KOLOSOVA	SVETLANA	VASIL'EVNA	1993	76.0
9	KONDRATENKO	NIKOLAI	KONSTANTINOVI	1991	70.7
10	SHINKAREV	ALEKSANDR	VLADIMIROVICH	1990	70.6
11	GONCHAROVA	OL'GA	VLADIMIROVNA	1990	69.7
12	KOLOSOV	SERGEI	VASIL'EVICH	1992	63.5
13	KASHKIN	ALEKSANDR	ALEKSEEVICH	1995	60.3
14	ALEKSEEVA	IRINA	NIKOLAEVNA	1991	57.2
15	MANALTAEV	EVGENII	ALEKSANDROVICH	1988	55.9

Average specific activity:

in the whole group: 26.7 ± 2.2 Bq/kg.

in the critical group: 78.6 ± 4.3 Bq/kg.

Internal exposure:

in the whole group: 0.07 mSv/a,

in the critical group: 0.22 mSv/a.

Cumulative dose in the whole group: 2.60 mSv/a.

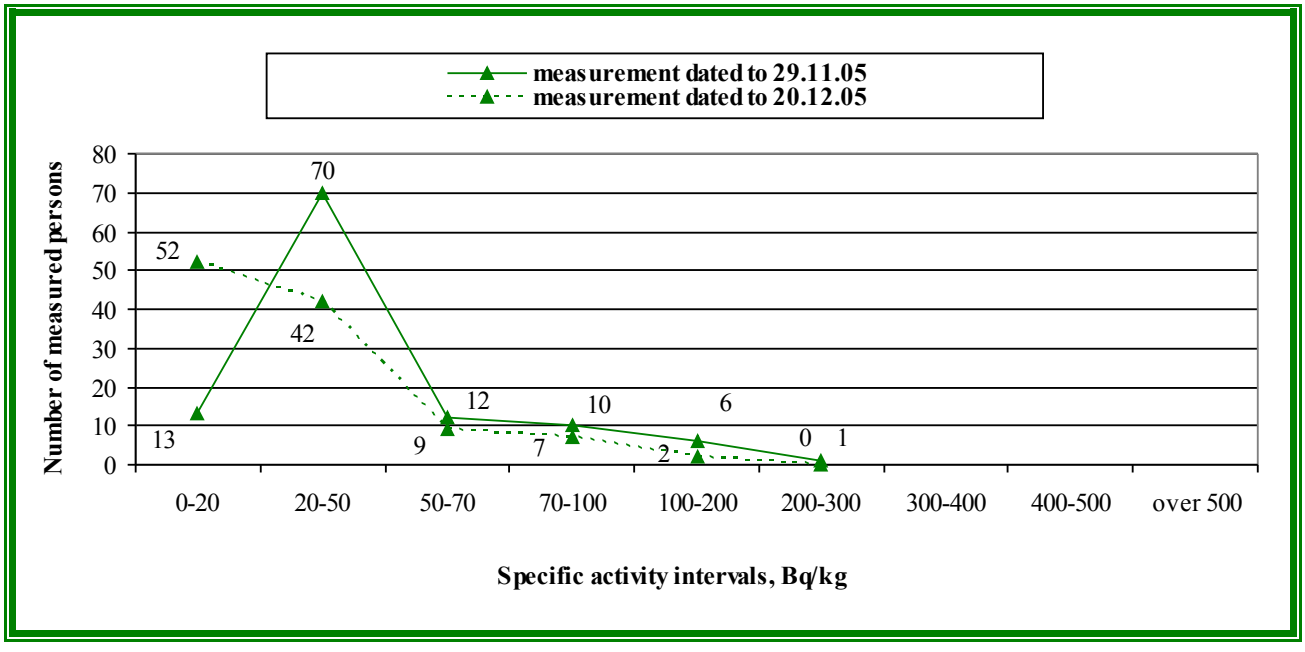
Cumulative dose in the critical group: 2.75 mSv/a.

The variation of the specific activity was calculated for the control group of children (112 persons) measured twice on 29.11.05 and 20.12.05 and taken the pectin preparation “Vitapect”. The average decrease of the specific activity reached to 40.4%.

To demonstrate the effectiveness of the following work performed by the staff of the Institute “Belrad” under the Contract consisting in radiological measurements, pectin cures, explanations and information about the healthy life style and food in conditions of radioactive contamination the figure 8 is given below.

This figure demonstrates the dynamics of the variation of the radionuclides specific activity in all measured children in Svetilovichi after 2 WBC measurements performed in framework of the Contract

Figure 8 - Plot of the distribution of the interval specific activity of ^{137}Caesium in children in Svetilovichi of Vetka district of Gomel region in accordance with the results of measurements dated to November 29 and December 20, 2005.



In the whole within the performance of radiation protection measures for the children in Svetilovichi we managed to reach the decrease of the specific activity of ^{137}Caesium incorporated radionuclides in their organisms in **40.4%**, including the critical – **in 36.9%**.

Conclusion

As a result of the implementation of the work under the Contract "RADIATION MONITORING OF CHILDREN FROM VETKA AND CHECHERSK DISTRICTS OF GOMEL REGION" between the Institute of Radiation Safety "Belrad" (Belarus) and the association "ABAECHE" (Spain) much success was achieved in decreasing of the radionuclide specific activity in children: in the village Belyayevka there was a 24.9% decrease (incl. 29.1% in the critical group), in Voznesensky – 45.7% (54.4%), in Zalesye – 40.7% (38.3%), in Merkulovichi – 30.5% (34.0%), in Motnevichi – 38.2% (33.2%), in Nisimkovichi – 9.1% (13.7%), in Polesye – 14.6% (49.9%), in Svetilovichi – 40.4% (36.9%).

Результаты проведенных исследований позволяют сделать следующие выводы:

- **Practically all measured children have incorporated ^{137}Cs radionuclides in their organism, sometimes their activity reaches to several hundreds Becquerel per one kilogram of body weight;**
- **The sources of the Caesium intake were local foodstuffs, first of all milk, mushrooms, berries, game that is confirmed by the data of the radiation monitoring of foodstuffs performed by the radiometrists of the LCRC at the same time with WBC-measures;**
- **An effective measure for radiation protection of the population of the Chernobyl regions is radiation monitoring that includes regular WBC measurements, pectin cures, a permanent radiation monitoring of local foodstuffs and an introduction of the systematic decontamination of the organism from radionuclides into the lifestyle;**
- **Measurements of incorporated Caesium should take place not less than four times within the spring-autumn cycle;**
- **The measurements should be performed in all settlements in the districts affected by the accident at ChNPP without exceptions, in which connection not only children but also other inhabitants should be involved in measurements;**
- **The basis for making decisions about the conduction of radioprotective measures should serve the results of WBC measurements of the specific activity of radionuclides, in which connection the measures can be applied to the concrete person as well as to the school, village, district, region because these results have the more objective character than the dose limit is as the dose is a calculated value and not always it takes account of a single person;**

- **Radiation monitoring as radiation protection measure should combine with other measures and actions directed to restore the health state of the population, first of all of children;**
- **Only a comprehensive approach to the solution of the problem of the health state of children in the Chernobyl districts of Belarus can help to achieve positive results. Scientists, physicians and public charitable organisations should be involved;**
- **Each child should be supplied with the preparations for the decontamination of the organism during a long period time and should have a possibility to travel to "clean" districts for the recuperation;**
- **All the authorities, organisations and foundations should develop the joint conception for social and physical rehabilitation of children from the Chernobyl zone of Belarus.**

* * *

Інстытут радыяцыйнай бяспеки

БЕЛРАД

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тел./факс (375-17) 289-03-84, 289-03-83

e-mail: v_nester@hmti.ac.by, vnester@tut.by, belrad@hmti.ac.by, belrad@nsys.by

№ _Б1-672_
от _08.12.06_

Association «ABAECHE»

Spain

Dear sirs!

We send you the analytical report in English to the Contract No. 101 "RADIATION MONITORING OF CHILDREN FROM VETKA AND CHECHERSK DISTRICTS OF GOMEL REGION". A total of measurements under the Contract - 1665 (incl. 1464 measurements of children), 747 small boxes of "Vitapect" were delivered.

Best regards,

Professor Vasily Nesterenko

Down: Machina of BELRAD for to made the treatment VITAPECT-2, effective but innocuous solution to decrease the levels of radiation and heavy metals in the bodies.

Instituto de la Seguridad de Radiación "BELRAD" Laboratory of espectrometry of radiation of persons.
220053 Minsk, callejón 2 Marusinski, 27, tel (017) 289-0386

The list of children who had been in Murcia, Spain, for their sanitation. Measures of radiation before and after of trip.
The group had the dose of Vitapect in Murcia too.

№	Fecha	Apellido	Nombre	Birth	village	Kg	Level of Potasium		Measures of Caesium-134, -137, Bq/kg	
							norma	De facto	4 july 2006	29 august 2006
1	29/08/06	Anishchanka	Aliaksandr	1998	Krasnopolie	28	63	41 - 34,92%	27.13	15.23 - 43,86 %
2	29/08/06	Bazhkova	Darya	1998	Krasnopolie	32	60	48 - 20,00%	30.34	12.40 - 59,12 %
3	29/08/06	Beker	Maryna	1998	Golovchici	26	49	39 - 20,40%	25.90	10.14 - 60,84 %
4	29/08/06	Vasilenka	Katsiaryna	1996	Lelchici	30	56	44 - 21,42%	34.96	21.82 - 37,58 %
5	29/08/06	Vasilkou	Dzianis	1998	Krasnopolie	26	58	37 - 36,20%	20.11	12.30 - 38,83 %
6	29/08/06	Dzmitrenka	Natalla	1998	Komarin	20	38	33 - 13,15%	35.83	16.45 - 54,08 %
7	29/08/06	Zykava	Darya	1999	Komarin	25	47	38 - 19,14%	48.27	25.47 - 47,23 %
8	29/08/06	Kaplumou	Raman	1998	Krasnopolie	37	83	51 - 38,55%	18.70	0.00 - 100 %
9	29/08/06	Klimovich	Inesa	1997	Lelchici	27	51	42 - 17,64%	15.99	0.00 - 100 %
10	29/08/06	Kavalchuk	Natalla	1997	Ogorodniki	33	62	45 - 27,41 %	30.20	15.28 - 49,40%
11	29/08/06	Kozak	Natalla	1998	Golovchici	28	53	41 - 22,64%	41.55	22.58 - 45,65 %
12	29/08/06	Kastsiuchenka	Hanna	1999	Komarin	23	43	36 - 16,27%	44.40	18.35 - 58,67 %
13	29/08/06	Lohvinenka	Katsiaryna	1997	Golovchici	26	49	36 - 26,53%	39.77	16.18 - 59,31 %
14	29/08/06	Markava	Daryna	1996	Komarin	24	45	37 - 17,77%	30.20	16.87 - 44,13 %
15	29/08/06	Martsiusheva	Hanna	1996	Komarin	29	54	38 - 33,33%	44.81	20.53 - 54,18 %
16	29/08/06	Ramanenka	Anastasiya	1999	Komarin	25	47	36 - 23,40%	16.89	0.00 - 100 %
17	29/08/06	Hancharou	Uladzislau	1998	Krasnopolie	23	51	37 - 27,45%	21.85	0.00 - 100 %
18	29/08/06	Ioda	Sviatlana	1997	Dyatlovo	29	54	39 - 27,77%	10.04	0.00 - 100 %
19	29/08/06	Korkuts	Katsiaryna	1996	Budki	28	52	38 - 26,92%	29.01	14.51 - 49,98 %
20	29/08/06	Korkuts	Yanina	1997	Budki	25	47	36 - 23,40%	129.67	42.18 - 67,47 %
21	29/08/06	Krepak	Victoryia	1997	Budki	26	49	36 - 26,53%	27.83	13.91 - 50,01 %
22	29/08/06	Lavoranka	Katsiaryna	1996	Golovchici	32	60	44 - 26,66%	26.17	13.08 - 50,01 %
23	29/08/06	Malashchank	Halina	1996	Yurovichi	58	109	90 - 17,43%	20.64	0.00 - 100 %

		a									
24	29/08/06	Panasenka	Valeyia	1997	Krasnopolie	33	62	44	- 29,03%	29.94	**14.85 - 50,40 %**
25	29/08/06	Skidan	Alena	1997	Slobodka	31	58	41	- 28,31%	**55.76**	**21.60 - 61,26 %**
26	29/08/06	Flerka	Palina	1998	Udarnoe	29	55	39	- 29,09%	21.77	**0.00 - 100 %**
27	29/08/06	Shnarau	Dzmitri	1998	**Krasnopolie**	24	54	36	**- 33,33%**	30.57	**18.34 - 40,00 %**
28	29/08/06	Yarash	Anastasiya	1998	Ogorodniki	24	45	38	- 15,55%	36.52	**17.89 - 51,01 %**
29	29/08/06	Yatchanka	Iryna	1998	Budki	28	53	38	**- 30,18%**	**102.06**	**35.81 - 64,91 %**
30	29/08/06	Zorina	Anna	1985	Minsk	62	109	98	- 10,09%	0.00	**0.00 (monitora ref.)**
											Media de 29 : - 63,37 %

El grupo de niños quienes regresaron del saneamiento en España el 29 de agosto del 2006

1. El significado mediano de la actividad del Cs-137 durante las primeras mediciones el 4 de julio del 2006 (30 personas):
   A (la cantidad mediana de la radiación a un kilo del peso) (n=30 personas)-35,3±4,4 Bq/kg
2. El significado mediano de la actividad del Cs-137 durante las mediciones repetidas el 29 de agosto del 2006 (30 personas):
   A (la cantidad mediana de la radiación a un kilo del peso) (n=30 personas)-13,9±1,9 Bq/kg.

La eficacia de la disminución de la actividad específica del Cs-137 se calcula solo para el grupo de niños quienes pasaron las mediciones primerias y repetidas (n=30 personas).

La disminución de la actividad especifica media es 62% (30 personas).

(note : Dr. Bandazhevsky and BELRAD considerer that levels of Caesium around 50Bq/Kg are enough to damage organs as heart, kidneys, pancreas, etc.

(right photo: The model of Gamma Radiometer RUG-92, made by the proper Institute BELRAD. With this efficacious device (see parameters in www.belrad.nsys.by) around 400.000 measures of food had been done in order to check of radioactivity in food. The families can check gratis their food and eliminate the more dangerous foods and do not charge too much their bodies with Caesium-137 and others.

Group of children in lucky decreasing of his levels of Caesium. Thanks to BELRAD and Association and Hall Town from Lorca, (Murcia, Spain).

Down: ONE MODEL (translated to English, of course, in Belarus in Russian) OF THE INFORMATIVE TRIPTYCHES THAT BELRAD GIVES TO CHILDREN WHEN BELRAD GOES TO VILLAGES TO MEASURE THE LEVELS OF RADIATION OF CHILDREN. Contains easy instructions for families in order to prevent of radiation of the food.

And one more important moment.

Children's organism must refine from radionuclides regular.

For this purpose, child must accept pectin preparations. For example "Vitapect-2" (food additive).

If you have any additional questions you can call to us in Minsk: 234 07 25, 234 64 66

We are waiting for you!

IRS «BELRAD"

Institute of radiation safety "Belrad"

Our address:
V. Khoruschei str. 31A,
Minsk 220002

Tel: (017) 234-64-66
Fax: (017) 234-07-25
Email: belrad@hmti.ac.by

Better together!

How to protect yourself and your child from radiation

Institute of radiation safety "Belrad"

Tel: 234-07-25

INSTRUCTION FOR CHILDREN AND PARENTS

DEAR PARENTS!

Today employees of our Institute of radiation safety "Belrad" measured accumulation of radionuclides in organism of your child on body counter.

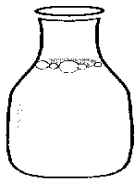
The director of school has all the results on accumulation of radiouclides in organism of your child.

Now we will give you information how to protect your child from influence of radiation with minimal costs.

About 90% of radiation burden children receive because of the food stuffs contaminated by the radionuclides.

However you can *REDUCE THE POLLUTION OF FOOD STUFFS IN SEVERAL TIMES* with the help of prime domestic recipes.

Milk



Processing of the milk to fat milk products (cream, butter, cheese) essentially reduce content of radionuclides . Attention! You cannot use the whey formed!

Potato

Potato release from radionuclides with the help of steeping in the water during the 3-4 hours and some salt added and obligatory refinement from the peel before cooking.

Meat

You must cut the meat on pieces of medium size and steeping in the water during the 10-12 hours, add some salt and vinegar . When you cook the meat you must merge the first broth after 8-10 minutes of boiling.

Vegetables

You can reduce the content of cesium-137 in vegetables on 20-50% with the help of suppression and cooking obligatory refined vegetables.

Mushrooms

Russulas gathered near the village Chirkovichi of Svetlogorsk district had the activity 280 Bq/ kg. After triple steeping in the 3%-solution of cooking salt for 20 hours their activity has decreased in 10 times and was 28 Bq/ kg.

Healthy meal strengthens organism and therefore weaken the activity of the radionuclides.

OUR RECOMMENDATIONS ON THE HEALTHY MEAL OF CHILDREN:

- If the products are clean children must eat more apples, gooseberries, plums, black currant, strawberry, cherry, sweet cherry.
- They must eat sunflower seeds, beans, peas evolved in the vegetable garden.
- Give them lemons, oranges, peaches and nuts more often.
- If you have the opportunity, give them any vegetable and fruit juices, especially with pulp. Most useful juices are red juices: tomato, grape, pomegranate.
- Children must drink cacao every day.
- Children must eat pea-soup and bean-soup, buckwheat, rice, porridge, various salads and Russian salad with the sunflower oil to enrich organism by iodine, potassium, iron.
- Use in food many parsley, fennel, spring onions. Try to enter into the diet spinach and sea cabbage.
- Don't deprive children with the sweets. They can be not only tasty but useful. It's better to regale on zephyr, fruit candy, pastille (they contain pectin), dried apricots, raisins, dried plums (they contain minerals so useful for children).

Measuring of children in the schools of villages and Vitapect distribution.

Evacuated village.

Principals bags of Caesium -137. To consider too the other bags of very dangerous, (mortal too) isotopes as especially the Estrontium-90 & 89, Americium-241, Plutonium-238 a 241, ETC…


Caesium137
1 a 5 Ci/Km²
5 a 15 Ci/Km²
15 a 40 Ci/Km²
> 40 Ci/Km2
1Ci/km² = 37KBq/m²
ГИДРОГРАФИЯ
МИНСК
БОРИСОВ
МОГИЛЕВ
БОБРУЙСК
БАРАНОВИЧИ
СЛУЦК
ЖЛОБИН
СВЕТЛОГОРСК
ГОМЕЛЬ
РЕЧИЦА
МОЗЫРЬ
ЧАЭС
РЕДАКЦИОННО-АВТОРСКИЙ КОЛЛЕКТИВ ПО ПОДГОТОВ
РАДИАЦИОННОЙ ОБСТАНОВКИ НА ТЕРРИТОРИИ
созданной в 1989 году распоряжением Совета Министров Республики Беларусь.
Настоящая карта отражает состояние на январь 1995 года с учетом распада цезия-137 и стронция-90, уровни которых уменьшились примерно на 20% по сравнению с первоначальными.
Карта рассмотрена и одобрена Межведомственной комиссией по радиационному контролю 9 февраля 1995 года.
В соответствии со статьей 5 закона Республики Беларусь «О социальной защите граждан, пострадавших от катастрофы на Чернобыльской АЭС», отнесение территории к зонам радиоактивного загрязнения производится не реже одного раза в три года.
все населенные пункты республики, а также детские дошкольные учреждения, школы, оздоровительные лагеря, дома отдыха, санатории, около 350 тысяч подворий на загрязненных территориях.
Проводятся работы по дезактивации школ, ДДУ, подворий и других объектов, где мощность экспозиционной дозы гамма-излучения превышает контрольные уровни, установленные Национальной комиссией по радиационной безопасности.
При составлении карты использованы данные по содержанию радионуклидов в почве, полученные Комгидрометом, Минсельхозпродом, Минлесхозом, Академией Наук.
Все результаты радиационного обследования рассматриваются на Межведомственной комиссии по радиационному контролю,

THE INSTITUTE OF RADIATION SAFETY "BELRAD"

- Main directions of scientific activity
- Possible cooperation

The institute of radiation safety "BELRAD" (Institute "BELRAD") was created in 1990 and acts as independent not state organization.
The goal of activity of the Institute "BELRAD" is radiation monitoring of the inhabitants of Chernobyl zone and their foodstuffs, development of measures on maintenance of radiation safety and protection of the population on territories, contaminated by radionuclides by realization of necessary scientific researches, development and organization of implementation of their results in practice.

One of the main trends in the scientific activity of the Institute for the minimization of the consequences of the Chernobyl accident for the population of Belarus is

- **Creation of network of local centers of the radiation control of food stuffs at the population and informing of the population on radiation danger;**

Since 1990, the institute "Belrad" carries out radiation monitoring of the contents of Cesium-137 in foodstuffs at local centers of the radiation control (LCRC), created at local councils (schools, ambulance stations) with financial support of the State Committee on overcoming of Chernobyl consequences. These LCRC were created in the largest villages, affected by Chernobyl accident in Gomel, Brest, Mogilyov and

Minsk region. Now 16 LCRC are financed at expense of the humanitarian aid from Germany. (Establishing and operation of the LCRC during the first year cost 3405 Euro, operation of the LCRC during the second and the third year costs 1238 Euro per year, operation of the LCRC during the three years -3714 Euro, training of one radiometrists - 180 Euro).
Computer databank of the Institute "Belrad" contains more than 320 thousand results of the radiation control of foodstuffs. The establishment of excess of the contents of Cesium-137 in food stuffs above republican allowable levels (RDU) is the basis for the prime control of children on SHR for definition of the contents of radionuclides in their organism.

One more important trend in the activity of the Institute is

Radiation monitoring on SHR of accumulation of Cesium-137 in organism of children of Belarus

The Institute created and accredited on independence and technical competence (by the System of accreditation and test laboratories of the Republic of Belarus (certificate of accreditation № BY/112 02.1.0.0385)) the laboratory of spectrometry of human radiation (SHR).
The laboratory is equipped by seven complexes "SCRINNER-3M" (designed and produced by the Institute of human ecology, Kiev, Ukraine, software is modified by the experts of the Institute of radiation safety "Belrad").Each complex "SCRINNER-3M" passes annual mandatory metrology certification with issue of the certificate.
The rules of jobs on measurement is determined by “the Methodical recommendations for realization of measurement of activity of incorporated gamma - radiation radionuclides in human body with the help of spectrometers of human radiation "SCRINNER" and "SCRINNER-3M" (МВИ.МН 1467-2000), approved by the State committee on standards of the Republic of Belarus, by «Norms of radiation safety NRB-2000» and by «the Basic sanitary regulations of job with radioactive materials and other sources of ionizing radiations of OSP - 72/87».
To fulfillment of measurement is undertaken by the persons, studied methodical recommendations, passed course of training, passed the exams in the training center of the firm - manufacturer and received conforming certificates.
The automated complex of spectrometry of internal human radiation "SCRINNER-3M" is intended for definition of activity of incorporated gamma-radiation radionuclides in the human body and for identification of dose burden.
The complex determines activity of the following incorporated radionuclides: cesium - 137, cesium - 134, potassium - 40, radium - 226, thorium - 232, manganese - 54, cobalt - 60, iodine - 131 etc.
Nowadays, the basic element, forming dose of internal irradiation, is the cesium – 137.
Unit of measure - Becquerel per kilogram (Bq/kg).
Except for the contents of radionuclides, the complex “SCRINNER -3M” allows to determine the contents of potassium in an organism of the person, which is extremely important for habitability of the person.
The essence of determination of the contents of potassium in an organism in the following. a radioactive isotope, the potassium - 40 has constant weight significance among all isotopes of potassium (0,0119 % by weight). Determining the contents of radionuclides of potassium - 40 in an organism, the complex automatically on this weight significance calculates the general contents of potassium in an organism in grams, simultaneously expecting norm of the contents of potassium, personal for each person. The norm of potassium in an organism depends on sex, age and weight of the person.
All 7 complexes „SKRINNER-3M“ and microbuses of the laboratory of the Institute „Belrad were purchased with the support of the Chernobyl charitable organizations from Germany, Ireland, the USA and Norway. The Institute organizes field missions with the purpose of performing WBC measurements at schools and kindergartens of the Chernobyl zone of Belarus.

(Single measurement on WBC costs 2.4 Euro, transport charges for 1 vehicle per 1 trip of 800 km make 248 Euro, travelling allowance for 2 persons within 3 days - 90 Euro).
From 1996 to 2004 the Institute „Belrad“ performed WBC measurements of more than 250 thousand children in Gomel, Brest, Mogilyov, Minsk, Grodno and Vitebsk regions and in Minsk. There were identified the children with Cesium-137 contents of 2000 to 4000 Bq/kg. The resulkts of WBC measurements are directed to the Ministry for Public Health Services, local authorities in order to perform protective measures. Medical examinations of the state of children‘s health in the Chernobyl regions of Belarus (prof. Bandazhevsky) showed when the children have Cesium-137 contents of 30 to 50 Bq/kg there come pathological disorders of vitally important systems (heart, immune, disgestive, nervous systems) and organis (eyes, kidney etc.). Therefore 90% of the children measured on WBC need rediation protection.
The lists of children having large radiaonuclide accumulation in the organism are submitted to the charitable organisations of Belarus, Ireland, Germany, France, the USA and Austria for them to be included in the recuperation groups.
In accosiation withthe physicians the Institute „Belrad developed a conception of radiation protection of children due to the regulary intake of enterosorbents () four times a year. Every day, in the morning and in the afternoon the children take a drink (a tee spoon (5 gram) of dry powder (pectin + vitamins B_2, B_6, B_{12}, C, E, β-carotene, folic acid, microelements additions: K, Zn, Se) is soluted in 100 gram of water or juice) during 20 to 30 days before taking meals.

One more important trend in the activity of the Institute is

organization of production of pectin food additive "Vitapect" and radiation protection of the population by pectin preparations

From April 2000, after the receipt of the certificate of the Ministry for Public Health Services of the Republic of Belarus the Institute “Belrad” organised the laboratory that produces daily up to 100 small boxes of the preparation “Vitapect” based on apple pectin with the addition of 7 vitamines and 4 microelements. It costs in 2 to 3 times lower than the same preparations produced in France or in the Ukraine. “Vitapect” binds and removes effectively radionuclides and heavy metal iones from the organism. One tea spoon (5 g) of powder contains: apple pectin – 4335 mg; vitamins: B2 – 0.2 mg, B6 – 0.7 mg, B12 – 0.0006 mg, C – 20 mg, E – 3 mg, beta carotene – 1 mg, folic acid – 0,04 mg; mineral substances: K – 125 mg, Zn – 3 mg, Se – 0.015 mg; taste additives: citric acid – 200 mg, lactose – 150 mg, saccharine - 20mg.
The natural apple components which are included into the structure of “Vitapect-2", promote operation of all known mechanisms of binding and abjection with pectin of ions of heavy metals, radionuclides. There is binding or complex formation of ions of heavy metals and radionuclides; the viscosity of intestine contents increased; the re-sorption of bound ions of heavy metals and radionuclides decreases; there are optimal conditions for breeding of intestine microflora; normalizes the level of cholesterol in a blood; increases the parameter of lipo-proteins of low and high density (LLD and LHD), that reduces hazard of myocardial infarction.
“Vitapect-2” apply in districts with unsatisfactory environmental conditions and in territories, contaminated after accident on Chernobyl NPP, in regions of NPP operation, production and processing of uranic ores; for preventive maintenance of professional diseases and intoxications at the enterprises with the hazardous production conditions; for maintenance of normal operation of alimentary system, at colitis, coloenteritis, coprostasia, dysbacteriosis of intestine; for preventive maintenance of atherosclerosis and sugar Diabetum; at chronic intoxications; for stimulation of metabolism. (One pack of “Vitapect” costs 3,6 Euro).
As a result of application “Vitapect-2” in Chernobyl districts of Belarus, the contents of radionuclides in organism of children reduced on 40-90% within 24-30 days.

In June 2001, in association with French physicians the double blind trial of the efficiency of "Vitapect" was performed in accordance with European standards. It demonstrated that within the 21-days intake of the preparation the reduction of Cesium-137 contents was 66% approximatelly where as it was 14% when taking placebo in the parallel group.
From 2001 to 2004 the staff of the Institute "Belrad" gave the preparation "Vitapect" to 36 thousand children.

For the control of the radiation situation and the levels of radiation contamination in foodstuffs following activities are developed at the Institute:

Development and manufacturing of dosimeter and radiometric devices of the control of food stuffs for radiological services of Belarus;

Combined device (dosimeter– radiometer) "Belrad-04-01"
was developed for control of radiation situation at places, in living accommodations and working rooms, on territories of enterprises using the radioactive substances and other sources of ionizing radiation. It can be used as an indicator of beta-particles flux density from contaminated surfaces. It is made in form of a portable device that can be carried with the help of a small strap or in a pocket. Case of the device is made of blow-durable plastic .
(Combined device (dosimeter– radiometer) "Belrad-04-01" costs 150 Euro).

Automatized gamma-radiometer RUG-92M-01

gensures the control of activity levels of food-stuffs, agricultural production, forage and building materials contaminated with radio-nuclides of cesium-137 and cesium-134; is an effective device for radiation control in radiometric laboratories of the Ministry of Agricultural Products, in enterprises of food industry, in local centres of radiation control of food-stuffs of the population, at territorial sanitary-epidemiological stations of the Ministry of Public Health Services, at establishments of public catering.
RUG-92M-01 shows the stability of readings and high reliability in operation.
RUG-92 M-01 is compact; its combined shielding has minimal dimensions but allow to ensure optimum of technological features; the high efficiency of shielding gives an possibility to work in conditions of increased background radiation of up to 50 microroentgen per hour;the structure of the radiometer, which has to be earthen, ensures electrical safety of its users.
RUG-92 M-01 insures: the possibility of radiation control of liquid and dry samples, samples in form of paste as well as crumbled up hard food-stuff samples; samples which have to be studied for radioactive contamination are placed in the Marinelli vessel if volumes of samples are 1 litre or 0.5 litre or in a flat vessel if the volume of the sample is 0.25 litre; the automatic stabilization of the amplification coefficient (it is especially important when the activity level is lower than 100 Bq/kg,l) and the elimination of the influence of the radioactive potassium on results of the activity of cesium in foodstuff measurements.

(Automatized gamma-radiometer RUG-92M-01).

The socio-pedagogical field of the IRS "Belrad" includes:

organisation and supervision of the work of the training centre for radioecological education of teachers and parents from the Chernobyl regions in the field of radiation protection of children as well as for training of specialists-radioecologists for radiological laboratories.

In December 2003, in framework of the TACIS project in association with the Charity House the IRS "Belrad" performed the training courses in the field of radiation safety for the teachers of the schools of the Chernobyl zone of Belarus. The leading specialists in field of radiation safety and radioecology, radiation medicine were involved in the realisation these aims, they gave lectures concerning problems of radiation safety, radiation medicine, agrarian technologies in radiocontaminated territories, concerning radiation control and monitoring of the environment in the Republic of Belarus, legal problems of the inhabitants in the contaminated territories etc.

One more interesting example of such kind of activity is a German-Belarusian project GTZ implemented in 2002 and 2003. It was aimed to help each inhabitant of contaminated regions by submitting information and educational manuals in the field of radiation protection. The materials prepared in framework of this project under the support of the government of Germany inform people about personal everyday practical possibilities of the better protection from radionuclides containing in foodstuffs. The final aim of the project was connected with schools and local centres for radiation control of foodstuffs, first of all.

Within the last years the Institute tries to liven up

international cooperation with the Western Chernobyl initiatives concerning radiation monitoring of Cesium-137 contents in children and their radiation protection by pectin preparations

For example, in association with the Chernobyl initiatives of Germany, Austria, France, England, Ireland and Belgium the Institute managed to perform WBC measurements of several thousands of children before their travelling for recuperation, the intake of pectin preparations during their recuperation abroad and repeated WBC measurements after returning home. Repeated WBC measurements of children having taken pectin preparations during the recuperation abroad demonstrated the 65% to 80% reduction of Cesium-137 contents in their organisms. Such cycles of measurements of children were performed within their recuperation in England and Ireland but without taking pectin preparations and demonstrated the 15% to 20% reduction of Cesium-137 in their organisms.

While working together with the Italian Chernobyl Initiative 650 Belarusian children were in Italy for the recuperation. In Italian families they took pectin preparation and when making measurements at the airport after their return the 50% to 55% decrease Cesium-137 contents in their organisms was identified.

There was concluded a contract with the French Chernobyl Initiatives on purchasing and giving pectins to children for the intake four times a year. This permits to reduce annual radiation dose in 3 to 4 times.

The Institute appreciates the cooperation and aids of all its foreign partners, due to them it becomes possible to perform the activities on minimization on the effects of the accident at the Chernobyl NPP.

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(Before of possible collaboration, please confirm by mail the actual account bank)

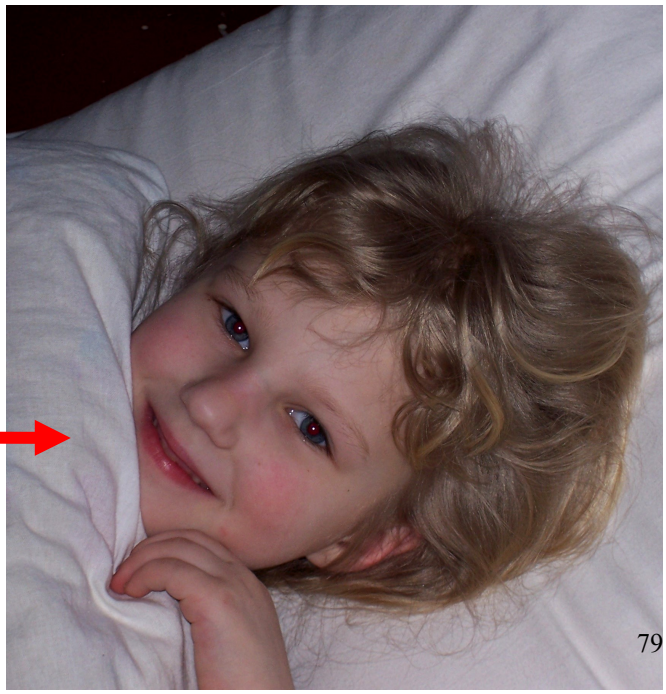
www.belrad.nsys.by

BELRAD ambulances going to measurements to contaminated villages.

Please, if you want **articles (In English and German) about the situation due to Chernobyl**, please, in the web of Institute BELRAD **you can obtain articles of genius Professor Nesterenko:** **www.belrad.nsys.by** and **http://members.fortunecity.com/asasas25/Nester/nesteree.htm**

(**Info in French**: **http://enfantsdetchernobylbelarus.doubleclic.asso.fr/**)

Please try collaborate with BELRAD in order his team can help them decreasing their radiation levels; there are thousands and thousands of children and parents who are waiting to improve their health before it were late.



Do not you believe that all these children deserve all our help? BELRAD's consolidated project it allows us to realize it very easy and comfortably.
They are a consolidated and excellent team of persons and engineers; only need our financing.

In Spain are collaborating with BELRAD the next entities: Hall Towns of LORCA, TOTANA, MAZARRÓN, JUMILLA, Foundation Savings Bank of Murcia. Association "Familias Solidarias con el Pueblo Bielorruso", ABAECHE Association, and Day-care centre for WINES "VINARIUS"
www.vinarius.es

Thanks you very much to all of them. It's needs amply the list of collaborators in all countries. Thousands of children and families need the test and effective medicine of BELRAD for decrease their levels and learn to reduce the radiation in food and know other preventives cautions with food and lands.