

with the matter of a statistical nature, and this leads to the fact that many physical factors, defining the dosimetric values are subject to random fluctuations.

These dosimetric quantities not describe microdosimetry system. The reason is that the concept of dose in its ordinary sense is only applicable to systems in which there is a sufficiently large number of events to fluctuations in individual acts of interaction didn't affect the value of a macroscopic quantity.

Development microdosimetry mainly determined by the needs of radiobiology, but its findings can be applied to any reaction of the irradiated material, depending on the microscopic distribution of energy.

The applied value of microdosimetry is determined by the ability of prediction and explanation of radiation effects in cases when these effects are caused by the defeat of sensitive microstructures such a small size that are significant fluctuations of the absorbed energy. For example, the genetic effects of radiation caused by the body's defeat of individual sections of the chromosomes that is carriers of heredity.

This discipline is in the active stage of development and continuous improvement. Research and development are carried out by the commission of the ICRP and ICRU.

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## **ANALYSIS OF THE LARGE-TONNAGE WASTE HANDLING IN THE REPUBLIC OF BELARUS**

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We have reviewed the handling of the large-tonnage wastes in the Republic of Belarus for the period from 2005 to 2014. For this analysis we selected the wastes with the maximum amount of the waste production during the period of this study. According to the state statistical reporting in 2005 there were such wastes as hard halite waste phosphogypsum, and hydrolytic lignin. In 2014 the construction waste came in the third place.

The amount of accumulated and annually produced large-tonnage industrial wastes are estimated by millions of tons. Therefore, the problem of their use and recycling is extremely important. In Belarus, the total percentage of the large waste recycling has been amounted to 1.5% in recent years.

The greatest amounts of waste production in the Republic of Belarus are characterized by halite waste and clay-salt slimes of JSC "Belaruskali", which were accounted in 2014 for more than 62% of the annual output of waste production in the country. In 2005, the percentage of using halite wastes was 3.3%, but by 2014, the volume of waste production had increased by 4 million tons, therefore, the usage percentage had dropped to 2.2%. The traditional directions of waste utilization are manufacturing of the new forms of fertilizers and ameliorants for agriculture, construction materials additives, and drilling mud additives, as a mineralizer for the in-

tensification of the lime burning process and utilization as ice-melting composite. Making brines for soda production on the basis of these wastes, which started to be applied at the Berezniki chemical plant, is new and promising direction.

The assignment level of phosphogypsum was increased by 0.3% in comparison with 2005 and had been amounted only 0.8% by 2014. Phosphogypsum is used for the fertilizer manufacturing, feed additives and ameliorants. The use of phosphogypsum JSC "Belarusian cement plant" as a partial replacement of natural gypsum stone in supplements regulating the rejecting time is also promising direction. Traditional ways of using phosphogypsum are high strength gypsum composite materials; the composition of synthetic compounds based on krumnagel and phosphogypsum; using for road construction fosfodiesterasa bitumomineraljnykh composite materials; gypsum binder on the basis of phosphogypsum; carbide of calcium from phosphogypsum. The fill-up of additives from phosphogypsum printing paper in a mode of heterologously, the preparation of the new phosphate-based feed additives for animal industry, the use of phosphogypsum as a component of flame retardant polyurethane foam are new and promising.

In 2005, lignin was in third place in waste production terms. Nowadays, lignin is used as fuel and in 2014 it was not included in the list of large-capacity waste.

In 2014, the large construction waste came in the third place. In 2014, 7115,9 thousand tons of construction wastes were produced, 78% of which - the uncovering breed; 5% – mixed waste of construction, demolition of buildings and structures. The amount of waste production of the rest construction wastes does not exceed 17%. The index they use is very high – about 63.8% of the volume of waste production. The main direction is recycling of these wastes to large recycling companies, for example. PRUP "Crushed stone".

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## **ANALYSIS OF ENVIRONMENTAL WASTE STATISTICS. BACKGROUND TO THE ELECTRONIC STATISTICAL REPORTING FORMS**

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Organization of industrial waste management system in the Republic of Belarus is one of the priority tasks in the field of ecology. To assess the effectiveness of action in this area, the development of the targets and taking strategic decisions in our country for more than 20 years, there is a form of state statistical reporting on waste. The statistical data transmitted on paper to the RUE "BRC" Ecology " today, employees of the organization carry out date further analysis and processing.

Database technology (DB) under the control of MS Access is now used for the processing and storage of statistical data