

UDC 657.1

**RADIOACTIVE WASTES AND THEIR ECONOMIC ESSENCE, CLASSIFICATION AND SOURCES OF EDUCATION****ANASTASIA KHARCHENKO, MARINA PRIMAKOVA****Polotsk State University, Belarus**

The approaches to the definition of the economic essence of the concepts of "waste", "radioactive waste" are considered, analyzed and systematized, the author's concepts of these categories are developed and proposed, their author's classification is given, the sources of radioactive waste formation are identified.

It is not easy to imagine human economic activity, which would not be accompanied by the formation of waste. Both in industry and in the energy sector waste is an integral part of the production process, so there is a need to take into account and systematize data on the formation and movement of waste, which, in turn, requires a competent definition of the concept of "waste".

To determine the essence of this concept, we have considered various approaches to the essence of the category of "waste", proposed in the normative documents of the CIS countries, the works of various authors and other sources. On the basis of the studied literature, we have given our definition: waste is a substance or processing, which are formed as a result of household or industrial activity of a person and are not used at the place of its formation, thus completely or partially lose their consumer properties.

Waste can be different. There are different approaches to waste classification, however, in all these approaches the following categories of waste should be distinguished: production waste and hazardous waste.

Production waste is waste generated in the process of implementation of legal entities and individual entrepreneurs of economic activity, by-products and related products of mining and mineral processing.

Hazardous waste is waste containing in its composition substances which have any dangerous properties or their totality, in such quantity and form that these wastes themselves or when coming into contact with other substances may represent a direct or potential danger of harm to the environment, health of citizens, property due to their harmful effects.[1]

And one of these hazardous wastes is radioactive waste.

After studying the various literature on radioactive waste, we found that its main features are radioactivity and unsuitability for further use. It should be noted that radioactivity is spontaneous decay, decomposition of atomic nuclei of some chemical elements, accompanied by emission of particles and electromagnetic radiation [2]. On the basis of this, we have given our definition of radioactive waste: radioactive waste is unsuitable for use substances or processing, which are formed as a result of human economic activity, the content and activity of radionuclides in which exceeds acceptable levels.

An important aspect for the accounting of radioactive waste is their classification, since the correctness of the classification depends on the correctness of the classification of radioactive waste to a particular object of accounting. But as radioactive waste is categorized as "waste", there is a need to start classifying waste production as objects of accounting.

Having considered the classifications proposed by various sources, the author's classification of waste was developed. Waste can be classified according to the following criteria (own development based on sources [3,4]):

- by origin: organic waste of natural origin, waste of mineral origin, waste of chemical origin;
- by the source of formation: waste of various branches of economic activity;
- hazard class: 1st to 4th grades;
- recycling opportunities in the enterprise: recyclable, difficult to utilize, non-utilized;
- if possible, further use: returnable, irrevocable;
- for the intended purpose: waste of various uses;
- in relation to economic processes: waste at the stage of preparation, waste at the stage of production, waste at the stage of implementation;
  - in relation to the production process: waste of the main production, waste of auxiliary production, waste of servicing production;
  - in relation to the technological process: waste arising at different stages of the technological process.

After studying and analyzing various sources, we found out what the main criteria for the classification of radioactive waste is allocated by the legislation of the Russian Federation and most of the authors, and on this basis developed a classification of radioactive waste, given in table 1.

Economics

Table 1. – Classification of radioactive waste

| Classification criteria  | Classification groups |
|--|-----------------------|
| By the ratio of risks associated with radiation exposure to the costs associated with their disposal | Removable             |
|  | Special               |
| According to the aggregate state   | Liquid                |
|  | Solid                 |
|  | Gaseous               |
| The composition of the radiation   | $\alpha$ - radiation  |
|  | $\beta$ - radiation   |
|  | $\gamma$ - radiation  |
|  | neutron radiation     |
| By degree of activity  | Low-level             |
|  | Intermediate level    |
|  | High-activity         |
| At the time of life  | Short-lived           |
|  | Average               |
|  | Long-living           |

Note: own development based on sources [5, 6].

We have identified the following main sources of radioactive waste:

- industry (oil industry, gas industry, etc.);
- energy;
- medicine;
- natural sources of radiation.

In the course of the work, the approaches to the economic essence and classification of the categories "waste" and "radioactive waste" were studied, analyzed and systematized; the author's definitions of the nature of waste and radioactive waste and their classification were proposed, the sources of their origin were considered.

REFERENCES

1. Об обращении с отходами : Закон Респ. Беларусь от 20 июля 2007 г. № 271-3.
2. Толковый словарь Ожегова [Электронный ресурс]. – Режим доступа: <http://slovariki.org/tolkovyy-clovar-ozegova/29151>. – Дата доступа: 10.04.2018.
3. Тумашик, Н.В. Проблемы учета затрат на качество, брак и утилизацию отходов производства / Н.В Тумашик // Проблемы современной экономики. – 2009. – № 5. – С. 184 –187.
4. Саяпина, Е.Н. Возвратные отходы: организация бухгалтерского учета, оценка и налогообложение [Электронный ресурс] / Е.Н. Саяпина. – Режим доступа: <https://www.audit-it.ru/articles/account/assets/a11/479341.html>. – Дата доступа: 10.04.2018.
5. Об обращении с радиоактивными отходами и о внесении изменений в отдельные законодательные акты Российской Федерации : Федер. закон от 11 июля 2011 г. № 190-ФЗ.
6. Родзинский, Г. Классификация радиоактивных отходов [Электронный ресурс] / Г. Родзинский. – Режим доступа: [webkonspect.com/?room=profile&id=8503&labelid=160707](http://webkonspect.com/?room=profile&id=8503&labelid=160707). – Дата доступа 19.04.2018.