

**Economic Issues of Radwaste Management Law Implementation in Russian Federation –  
14020**

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**ABSTRACT**

In 2011 the Federal Law #190 of Radwaste Management came into force in the Russian Federation. This Law regulates the whole cycle of radioactive waste management – beginning from the generation of the waste until its final disposal. It is now more than 2 years since coming into force, but there are still a few key issues:

- Radwaste property,
- State system of radwaste accounting,
- Radwaste management cost,
- Radwaste final disposal cost.

Being one of the biggest national radwaste managing companies in the Russian Federation, RADON is faced with the main issue – how to keep the business profitable against the background of increasing costs of the following: site remediation costs, radwaste packaging costs, radwaste transportation costs, radwaste characterization costs, radwaste treatment costs, conditioned radwaste temporary storage costs, the handover of radwaste to the National Radwaste Operator for the final disposal, and the radwaste final disposal cost. During this time FSUE “RADON” was working on adjusting its radwaste management and accounting system according to the new law. In the result of the work the new economical model was worked out, the relations with the main customer were kept, the main costs were reduced, and RADON obtained the new competitive advantages.

**INTRODUCTION**

The Federal Law #190 of Radwaste management came into force in Russian Federation in 11 July 2011. The main purpose of this Law is the regulation of the all issues arising during Radwaste management.

It includes the following key articles:

- - Legal regulation of relations in the field of radioactive waste management;
- - The classification of radioactive waste;
- - Federal rules and regulations governing the management of radioactive waste;
- - Ownership of radioactive waste and radioactive waste storage facilities;

- - Creation of a unified accounting system of radioactive waste;
- - Requirements to the radioactive waste storage and disposal;
- - Requirements to the radioactive waste disposal facilities;
- - State accounting and control of radioactive waste;
- - National operator for radwaste management;
- - Management with different types of radwaste;
- - Radwaste export and import;
- - The transfer of ownership of radioactive waste and disposal facilities.

All of these important issues are aimed to provide the highest level of safety during radwaste management.

### **MAIN HEADINGS (METHODS, DISCUSSION, CONCLUSIONS)**

According to the classification of radioactive waste there are the following types of radwaste:

- Removable radioactive waste - radioactive waste , for which the risks associated with radiation exposure , other risks , as well as costs associated with the recovery of radioactive waste from the point of storage of radioactive waste , subsequent management , including disposal , do not exceed the risks and costs associated with the disposal of radioactive waste in their location;
- Special radioactive waste - radioactive waste , for which the risks associated with radiation exposure , other risks , as well as costs associated with the recovery of radioactive waste from the point of storage of radioactive waste , subsequent management , including disposal , outweigh the risks and costs associated with the disposal of radioactive waste in their location .

Criteria for the classification of radioactive waste to a special radioactive waste and removable radioactive waste established by the Government of the Russian Federation .

Removable radioactive waste for disposal are classified according to the following criteria:

- depending on the half-life contained in radioactive waste radionuclides - long-lived radioactive waste , short-lived radioactive waste;
- depending on the specific activity - high-level radioactive waste , intermediate-level radioactive waste , low-level radioactive waste , very low-level radioactive waste;
- depending on the aggregate state - liquid radioactive waste, solid radioactive waste , gaseous radioactive waste ;
- depending on the content of nuclear materials - radioactive waste containing nuclear materials , radioactive waste not containing nuclear material ;
- spent sealed sources of ionizing radiation;
- radioactive waste generated from mining and processing of uranium ores ;
- radioactive waste generated during the implementation of the non- use of nuclear energy activities for mining and processing of mineral and organic materials with a high content of natural radionuclides.

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Federal rules and regulations governing the handling of radioactive waste establish requirements to ensure the safety of radioactive waste management , including :

- 1) eligibility criteria for radioactive waste disposal;
- 2) requirements for the interim storage of radioactive waste;
- 3) safety requirements for the location, construction, operation , decommissioning or closure of storage sites of radioactive waste;
- 4) requirements to passport radioactive waste;
- 5) requirements for the collection , transportation, storage and disposal of spent sealed sources of ionizing radiation ;
- 6) organize special items category of radioactive waste and conservation of special items of radioactive waste;
- 7) security requirements of paragraphs organize special radioactive waste and conservation of special items of radioactive waste , including taking into account the characteristics of individual items storage of radioactive waste ;
- 8 ) the procedure for the disposal of radioactive waste;
- 9) requirements for methods of protecting people and the environment from the risks associated with radiation exposure radioactive waste at all stages of radioactive waste management ;
- 10) requirements for the design of objects related to the management of radioactive waste , in terms of their safety evaluation system and evaluation of the design ;
- 11) requirements for the order granting organizations , asking for radioactive waste management , information about incidents involving radioactive waste management ;
- 12) requirements for the content and procedure for submission of plans for decommissioning of objects related to the management of radioactive waste;
- 13) requirements for the content and order of closure plans items disposal of radioactive waste .

Federal rules and regulations governing the management of radioactive waste , developed, approved and put into effect in accordance with the Federal Law of November 21, 1995 N 170-FZ "On the Use of Atomic Energy" and the provisions hereof.

Radioactive waste containing nuclear materials that can be exclusively in the federal property , and formed before the coming into force of this Federal law other radioactive wastes are

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federally owned . Radioactive waste generated from the date of entry into force of this Federal Law (except radioactive waste containing nuclear materials that can be exclusively in the federal property ) owned by the organization , as a result of which they were formed .

Disposal facilities of radioactive waste may be federal property or property of the State Atomic Energy Corporation "Rosatom" .

Long-term storage of radioactive waste , the temporary storage of radioactive waste , the sites where radioactive waste and special items special conservation radioactive waste may be federally owned or Russian legal entities.

Such property item storage of radioactive waste as a property complex includes property necessary to ensure safe operation , including land, buildings , structures, equipment , the right to use subsoil , water bodies and other natural objects.

Radioactive waste owners , owners of radioactive waste storage facilities are required to ensure the safe management of radioactive waste , safe operation , decommissioning , closure points storage of radioactive waste .

Creation of a unified system of radioactive waste includes the following steps:

- Development of regulatory and institutional framework of the system of radioactive waste , the initial registration of radioactive waste and their locations ;
- a system of disposal of low-level and intermediate-level radioactive waste;
- The establishment of high-level radioactive waste disposal , transfer points organize special radioactive waste in special items conservation of radioactive waste and conservation of special items of radioactive waste disposal facilities of radioactive waste.

Requirements for the disposal of radioactive waste

Radioactive waste , except for short-lived radioactive waste , specific activity of radionuclides in the decay during storage can be reduced to a level at which such wastes cease to be radioactive waste subject to mandatory disposal in paragraphs disposal of radioactive waste .

Disposal of solid high-level long-lived and long-lived intermediate-level solid radioactive waste is carried out in paragraphs deep disposal of radioactive waste , providing localization of such waste in accordance with the Russian Federation on February 21, 1992 N 2395 -I " On Subsurface " .

Disposal of solid low level radioactive waste and solid short-lived intermediate-level radioactive waste can be carried out at places near surface disposal of radioactive waste.

Disposal of radioactive waste produced during mining and processing of uranium ore , and very solid low level radioactive waste can be carried out without air conditioning in paragraphs near

surface disposal of radioactive waste.

Requirements for the safety of radioactive waste disposal facilities

Radioactive waste disposal facilities are objects of atomic energy use federal or inter-regional significance .

Works concerning the construction and operation of settlements deep burial of radioactive waste disposal facilities such closure is carried out in the presence of subsoil use license issued in accordance with the legislation of the Russian Federation on the bowels , and permit (license) to carry out work in the field of nuclear energy , issued in accordance with the legislation of the Russian Federation in the field of nuclear energy .

Security requirements for the location, construction, operation and closure of radioactive waste disposal points determined by the relevant technical regulations , legislation on environmental protection , and federal regulations.

Draft paragraph disposal of radioactive waste shall be provided periodic radiation monitoring on the territory of placing such item burial after its closure .

After closing paragraph of radioactive waste disposal and the potential danger of expiration of the period within the container of radioactive waste governmental authority in the field of radioactive waste management in coordination with the state safety regulation takes the decision to terminate the periodic radiation monitoring on the territory of placing such item disposal and appropriate modifications inventory items in the storage of radioactive waste.

National operator determined by the decision of the Russian Government on the proposal of the government in the field of radioactive waste management .

National operator performs the following activities :

- ensure the safe handling of accepted for disposal of radioactive waste;
- ensure the operation and closure of disposal facilities of radioactive waste;
- performs the functions of customer design and construction of disposal facilities of radioactive waste;
- produces forecasts of volume of radioactive waste disposal , infrastructure development for radioactive waste and post relevant information on the site and the site of the national operator government authority in the field of radioactive waste management in the Internet;
- technical and information support of state accounting and control of radioactive substances and radioactive waste ;
- other activities in accordance with the legislation of the Russian Federation.

National operator must:

- accept radioactive waste for disposal . Radioactive waste is taken for disposal must meet the eligibility criteria , and their disposal must be paid. When receiving radioactive waste for disposal is made act of transfer of radioactive waste;
- deduct when taking radioactive waste from organizations not belonging to organizations operating particularly dangerous radiation and nuclear hazardous production facilities and , in a special reserve portion coming from these organizations means for the disposal of radioactive waste. Deduction of such funds shall be as prescribed by the Government of the Russian Federation ;
- to provide nuclear, radiation , technical , fire safety, environmental protection, compliance with legislation on sanitary-epidemiological welfare of the population in the operation , closure and after the closing paragraphs of radioactive waste;
- to provide radiation monitoring points in the territories organize the disposal of radioactive waste , including periodic radiation monitoring after the close of such items ;
- to provide for the needs of citizens, legal persons , including non-governmental organizations , public authorities , other state bodies, local self-government information on the activities of the national operator to meet the requirements of the Russian legislation on state secrets ;
- to inform the public , public authorities and other government agencies , local governments on the safe handling of radioactive waste and radiation situation in the territories exploited organize national operator points the storage of radioactive waste.

Import to the Russian Federation of radioactive waste for storage, treatment and disposal is prohibited, except as provided in this article .

Export from the Russian Federation of radioactive waste generated during the processing of imported to Russia of spent nuclear fuel is allowed if it is stipulated by an international treaty of the Russian Federation. Allocation to the special reserve funds for the disposal of radioactive waste generated during processing of the spent nuclear fuel is not made.

If a sealed source of ionizing radiation was imported to the Russian Federation , permitted the return of spent sealed source of ionizing radiation in the supplier country closed source of ionizing radiation . Procedure for the return of spent sealed source of ionizing radiation in the country closed source vendor ionizing radiation established by the Government of the Russian Federation .

Allowed to return to Russia of spent sealed sources of ionizing radiation produced in the Russian Federation , including for the purpose of recycling or disposal. Funding for the return of spent sealed sources of ionizing radiation produced in the Russian Federation , by the organization - exporter of sealed source of ionizing radiation. Procedure for the return to Russia of spent sealed

sources of ionizing radiation produced in the Russian Federation , including for the purpose of recycling or disposal , established by the Government of the Russian Federation.

## **CONCLUSION**

Being a one of the biggest national radwaste managing company in Russian Federation, RADON faced with the main issue – how to keep the business profitable against of background of increasing the following costs:

- Site remediation costs,
- Radwaste packaging costs,
- Radwaste transportation costs,
- Radwaste characterization costs,
- Radwaste treatment costs,
- Conditioned Radwaste temporary storage costs,
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## **REFERENCES**

1. Federal Law #190 from 11.07.2011 “Of radwaste management”.