

Legal steps for decommissioning and remediation process of legacy uranium mining sites

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The safe deployment of nuclear activities in Romania is provided by Law 111/1996, republished and completed by Law 193/2003 and Law 378/2013.

The competent national authority in the nuclear field, which has responsibilities of regulation, authorization and control as stipulated in this Law, is the National Commission for nuclear Activities Control (CNCAN).

According to art. 2b) provisions of the nuclear Law shall apply to design, possession, siting, construction-assembly, commissioning, operation, conservation and decommissioning of the mining and milling facilities for uranium and thorium ores and of the waste management facilities of the waste resulted from the mining and milling of uranium and thorium ores.

The current regulatory framework in force for mining and milling is:

1. Law no. 111/1996 on the safe deployment, regulation, authorization and control of nuclear activities, republished;

2. Radiological Safety Norms on Decommissioning of Uranium and/or Thorium Mining and Milling Facilities with 3 Guidelines:

a) Guide on the recommended parameters for the estimation of the effective doses

on all relevant ways of exposure at the usage for different purposes of contaminated sites, dumps and tailing pond resulted from uranium mining and milling;

b) Guidelines on criteria for release from CNCAN regulatory control in order to use for other purposes of the buildings, dumps and contaminated areas by uranium mining and milling activities;

c) Guidelines on technical requirements for design, siting, construction, operation and decommissioning of storage areas of uranium and thorium ores and radioactive waste from uranium milling.

3. Radiological Safety Norms on the Management of the Radioactive Waste resulted from Fuel Cycle Facilities.

The provisions of this norms and guidelines provide elementary safety standards for the health protection of both workers and the general public against the dangers arising from ionizing radiation. In the same vein the specific regulations and guidelines contain detailed provisions on: the content of radiation protection program, conditions for release in the environment of liquid and gaseous effluents, monitoring and surveillance programs of the radioactivity of the environment factors, long term stability of dumps and tailing ponds, decommissioning of uranium production facilities, responsibilities of the license holders, obligations of the license holders regarding non-radiological risks generated by radioactive waste arisen from uranium mining and milling.

According to norms in force a proposal for the derived effluent emission limits must be initiated by the holder of license and approved by the regulatory authority. These limits must ensure full compliance with the dose constraints for member of the public. For example, for the closure of a uranium mine, the regulatory authority imposes a constraint of 0.3 mSv/year (or less if the collective dose is too high) for each individual within the critical group.

Also the norms stipulate the obligation of the holders to assure treatment of mine waters long time after closure in order to reduce the uranium and radium contents at accepted levels for general public. Total daily volume of the mine waters discharged in environment is about 10,000 m³/day containing up to 3mgU/l and 0.2 Bq Ra/l. After treatment (using ion exchange technology), their uranium average content is about 0.2 mg U/l.

The regulations for uranium mining and milling specify the radiological protection principles required for the use or release of contaminated areas, buildings, metallic scrap, sites and dumps from uranium facilities and for tailing pond closing.

For the unrestricted use of the reusable equipment and devices a contamination limit of 0.05 Bq/cm² total alpha activity was established.

The areas contaminated by the uranium mining can be released for unrestricted use if after remediation the activity of Radium-226 in dry soil is less than 0.2 Bq/g and the dose rate of dose measured at 1 m on top surface is less than 30 nSv/hou.

With regards to uranium mining and milling activities, the Romanian legislation takes into account three ob-

jectives:

- to ensure that the workers, the public and the environment are protected against the radiological hazard resulting from the exploitation of the uranium mining and milling industries;
- to provide protection during the period of exploitation and after the closure of uranium mines or milling facilities;
- to ensure that wastes (dumps) resulting from the operating of uranium mines and tailing ponds resulting of uranium ore milling are treated as radioactive waste.

Country or International Organization

National Commission for Nuclear Activities Control, Romania

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yes

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