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Experience on NORM Decommissioning in Brazil: lessons learned and future challenges

Brazil is a well recognized mining country, being one of the greatest exporters of iron, copper and gold, among other metals. In fact, mining activity is in charge of about 5% of the country GDP.

Besides the mining and production of uranium concentrate (for internal consumption), several activities related to NORM are being carried out in the country as, for instance, the phosphate industry, tin and niobium mining and alloys production, copper metal production and many others. Despite the variety of activities that, in fact, comprise nearly the whole well known positive list for NORM industrial activities, there is so far only one case of decommissioning of a NORM production site in the country.

Brazil was in the past the world's largest exporter of rare-earth elements. This history dates back to 1885, with the extraction of monazite from the northeastern shores of the country and had its apex from the 1950s to the 1970s, when the technology for production of RE compounds like, for example, high purity Eu and Lu oxides were locally developed. The main activities carried out were, however, from the beginning of the 1960s, the extraction of monazite from the shores of Rio de Janeiro and Espírito Santo states and the production of low purity RE and CeO₂ concentrates. This activity was carried out in a site in the city of São Paulo. The lack of knowledge and concern about environmental issues related chemical production practices and the absence of proper regulation in that time led to a situation of radiological contamination of the site. At the ceasing of operations in the 1990s, the neighborhood where the facility was located turned to be an area with heavy occupation density and not so remote as it used to be. The site had to be remediated and decommissioned due to environmental, economical and public concern reasons.

It is understood that Brazil is going to be a fruitful ground for experiences on issues regarding decommissioning of NORM sites not related to uranium production. The aim of this work is to present a brief overview of the experience of the decommissioning process carried out in the site aforementioned and, moreover, present and raise discussion about possible challenges to be faced by the country when future decommissioning initiatives start to take place.

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