

Briefing

Prospecting for and mining of radioactive minerals

New uranium mining projects have recently been announced in Tanzania. This month's mining briefing looks at the legislative framework surrounding radioactive minerals in Tanzania.

Legal basis

The Mining Act 2010 (the **Mining Act**) governs the mining industry in Tanzania. The Mining Act is supported by regulations which set out rules on specific matters, such as environmental protection and health and safety. The Mining Act provides that the Minister of Energy and Minerals may make regulations in accordance with the Mining Act.

In terms of radioactive minerals, the Mining Act is supported by the following legislation and authorities:

- the Mining (Radioactive Minerals) Regulations, 2010 (the **RM Regulations**);
- the Mining (Safety, Occupational Health and Environment Protection) Regulations, 2010 (the **SOHEP Regulations**);
- the Environmental Management Act, 2004 (the **EMA**);
- the Atomic Energy Act, 2003 (the **AEA**);
- the Ministry of Energy and Minerals (**MEM**);
- the National Environmental Management Council (**NEMC**); and
- the Tanzania Atomic Energy Commission (**TAEC**).

The prospecting for, mining and processing of radioactive minerals

Section 3 of the RM Regulations provides that a “radioactive mineral” is a mineral which contains by weight at least one-twentieth of one per centum of uranium or thorium or any combination and includes:

- monazite sand and other ores containing thorium; and
- caronite, pitchblende and other ores containing uranium.

In Tanzania the prospecting for, mining, processing or engaging in radioactive minerals is prohibited unless that person is the holder of a mineral right, conforms to the standards provided for in the EMA, the AEA and any other law relating to prospecting, mining, processing, transporting or storage of radioactive minerals, and provides a written declaration that he or she will not directly or indirectly contribute to the production of nuclear weapons or devices in accordance with the Nuclear Non-Proliferation Treaty to which Tanzania is a signatory (section 4 of the RM Regulations).

In addition to the above, section 6 of the RM Regulations provides that a person is not authorised to acquire, store, transport, import or export radioactive minerals unless they have obtained a permit issued by the Minister responsible for mineral affairs (the **Minister**).

In applying for a licence to prospect, mine or process radioactive minerals, section 5 of the RM Regulations provides that applicants are required to adhere to the provisions of the Mining Act. Once an applicant has been provided with a prospecting licence for radioactive minerals (the **Licence**), the holder of the Licence is not permitted to conduct any prospecting work or any other related activity unless he submits to the Minister for approval the following plans:

- a Radioactive Operation Management Protection Plan (which sets out measures to safeguard employees, the public and the environment against exposure to radiation during operation);
- a Radioactive Waste Management Plan (to manage all unwanted materials generated during prospecting, mining or processing operations); and
- a plan to transport and Store Radioactive Ores and Products (section 7(1) of the RM Regulations).

Furthermore, in ascertaining that the environment is kept safe from hazardous emissions the holder of the Licence is required to minimise pollution at all costs by:

- demonstrating to the Chief Inspector of Minerals, TAEC and NEMC that the radioactive waste management facilities are constructed in accordance with designs that are approved by the Minister and the operational procedures are in place prior to commissioning the facilities;
- operating such facilities, referred to above, for a set period as determined by the Chief Inspector for Minerals, TAEC and NEMC for the purposes of assessing the performance of the facilities (section 12(3) of the RM Regulations); and
- informing the Chief Inspector of Minerals, TAEC and NEMC, in writing, of any changes to the operation which may alter the nature or quantity of radioactive waste, any proposal to change the waste containment system, and any unanticipated circumstances that may affect the performance of the Waste Management Plan (section 12(5) of the RM Regulations).

General requirements under a licence for prospecting radioactive minerals

MEM is the authority that issues prospecting licences in Tanzania. In issuing such licences the following are some of the general requirements that must be adhered to:

- All holders of the Licence must ensure that no one is to carry on work involving radioactive minerals unless they have passed a medical examination (section 13 of the RM Regulations).
- In disposing of any radioactive minerals, the holder of the Licence must ensure that such disposal is done in

a manner which will not cause damage to any person, animal and the environment (section 14 of the RM Regulations).

- A holder of the Licence must ensure that all contaminated equipment and materials are stored in a secure and fenced off area with appropriate warning signs displayed in conspicuous locations, at all times indicating the levels of radioactive hazards present in the area (section 15 of the RM Regulations).
- Before abandoning a mine or a plant site the holder of the Licence must apply to the Commissioner for Minerals and submit, for approval, to the Minister a closure Environmental Impact Assessment (section 16(1) of the RM Regulations).
- In transporting and storing any radioactive mineral ores and concentrates, a holder of the Licence must ensure that prior to the transportation, storage, acquisition or exportation of radioactive mineral substances a permit from the Minister is obtained (section 17 of the RM Regulations).
- A holder of the Licence must not acquire, sell or export radioactive minerals except in accordance with the terms and conditions of an approval granted by the Minister (section 18(1) of the RM Regulations).
- A holder of the Licence must pay the Government of Tanzania royalties in accordance with the provisions set out in the Mining Act (section 21 of the RM Regulations).

Safety in uranium mining

TAEC is an institution established under section 5 of the AEA. With respect to uranium mining, TAEC, among other things, is responsible for carrying out regulatory inspections and ensuring that corrective actions are taken if unsafe or potentially unsafe conditions are detected (section 6 of the AEA).

Prior to starting a uranium mining project in Tanzania, the holder of the Licence must, among other things, get permission from TAEC. Following investigation of the area where the project will be taking place TAEC will ascertain whether it is safe for uranium mining.

When it comes to uranium exploration, the holder of the Licence must comply with the SOHEP Regulations which provide for the importance of observing safety precautions while on a mine site. In doing so, the holder of the licence is required to ensure that the disposal of any radioactive mineral is done in a manner which would not cause any harm or damage to any person, animal or the environment (section 8 of the RM Regulations).

Furthermore, holders of the Licence have to comply with the occupational and public dose limits laid down by the AEA. Section 38 of the AEA provides that the normal exposure of individuals must be restricted so that neither the total effective dose nor the total equivalent dose to relevant organs or tissues caused by the possible combination of exposures from authorised practices exceeds any relevant dose limit specified in the regulations made under the AEA.

Conclusion

Uranium mining is a growing industry in Tanzania attracting a lot of interest from foreign investors. The Government of Tanzania is cautious of the hazardous waste that can result from the mining and processing of radioactive minerals and as a result has taken steps through the establishment of NEMC and TAEC to minimise the risk. However, other than the RM Regulations, the country lacks a specific act to regulate uranium mining activities. Looking to the future, a more specific policy for uranium mining and extraction would be advantageous to the Tanzanian economy and would, as a result, help in providing a much clearer framework with respect to uranium mining.

Mining events in Tanzania

Tanzanian Explorers Club

The Tanzanian Explorers Club (TEC) is for people working in, or affiliated with, the Tanzanian mineral exploration sector and provides an informal environment to facilitate networking within the industry and information sharing between key participants in the Tanzanian mining sector. If you are interested in joining the next TEC meeting please email Clyde & Co's mining team to find out further details.

Further information

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