

International Conference on the Management of Naturally Occurring Radioactive Materials (NORM) in Industry

VIRTUAL EVENT

International Conference on
**Management of Naturally
Occurring Radioactive
Material (NORM) in Industry**

19–30 October 2020

#NORM2020



Contribution ID: 255

Type: Oral

Radiological Issues in NORM Related Industries - Regulatory Approach

Practices related to mining and processing of Uranium and Thorium ore are by default regulated as nuclear fuel cycle operations in India. Apart from that, Naturally Occurring Radioactive Materials (NORM) are also encountered in other industrial activities such as processing of Beach Sand Minerals (BSM), processing of Columbite Tantalite Ore, fertilizer industries handling Rock Phosphate and Phosphogypsum, oil and gas industries as well as in fly ash and tailings from processing of aluminium, zinc, tin, copper etc.. The exposure situation in these industrial processes depends on various factors such as feed, throughput, process, products and tailings/residues. The radiation protection aspects of such facilities are investigated thoroughly and the industrial activities like processing of BSM, processing of Columbite Tantalite Ore as well as fertilizer industries have been brought under regulation. For other processes, radiation protection aspects are assessed and implemented on a case to case basis.

To limit the radiological risks; radiation protection procedures like work place monitoring, environmental monitoring and exposure assessment as appropriate to the NORM related industries are adopted. Other operational, administrative and engineered measures are also implemented to control exposures. As regards the management of NORM bearing residues from the processes, suitable radiation protection measures are implemented to protect the health of workers, public and environment with appropriate monitoring and regulatory control. Since these residues contain long lived natural radionuclides at low concentrations, specific management approach is required to deal with them and regulatory procedures are accordingly governed by the process involved, site parameters, nature of risks etc. with due consideration to other non-radiological parameters.

Regulatory control in NORM related industries ensures that all activities including operation and management of residues are carried out safely within the dose constraints and other safety requirements prescribed by the regulatory body. A graded regulatory approach is particularly relevant to operations involving exposure to NORM, because the exposures are generally (but not always) moderate with little or no likelihood of approaching or exceeding the prescribed regulatory dose limit. Further, likelihood of extreme radiological consequences from accidents are also negligible. The occupational health and safety measures adopted to control other (non-radiological) hazards in the workplace also contribute protection against radiological hazards as well. It has been observed that the regulatory control exercised in NORM related industries in India have significantly contributed in improving the radiological safety and in management of NORM bearing residues.

Primary author: Mr PAYYAZHI VADAKKEKARA, Mohandas (Atomic Energy Regulatory Board, India)

Co-author: Mr SINHA, Soumen (Atomic Energy Regulatory Board, India)

Presenter: Mr PAYYAZHI VADAKKEKARA, Mohandas (Atomic Energy Regulatory Board, India)

Session Classification: Session I - NORM National Policies and Strategies

Track Classification: NORM Policy, Strategy and Regulations