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BACK-END SOLUTIONS FOR THE NORM WASTE GENERATED IN OIL AND GAS INDUSTRY IN BRAZIL

Typically, NORM generated by the oil and gas industry present low or intermediate radiation levels. Known challenges for its correct management are: (1) the huge volume generated; (2) the risks posed by the associated material; and (3) the unpredictability of its accumulation in the production process and topside equipment. The International Atomic Energy Agency (IAEA) indicates that the correct management of NORM radioactive waste should ideally be done through a unified and consistent national approach and should be designed to encompass the entire waste cycle –from 'cradle-to-grave'. IAEA also points out that, in the absence of an adequate strategy, there is a tendency for NORM waste management to be carried out in an uncoordinated and segmented manner, which may cause adverse social, economic, health and environmental impacts.

Currently Brazil does not have a national strategy for managing NORM wastes and there is no solution available for a proper final destination of this type of waste. The direct impact of this absence of repositories implies in industry practices that involve maintaining the NORM waste stored in large and increasing volumes in the offshore units or in onshore facilities, with both great operational, financial and safety negative impacts.

Considering the increasing offshore oil production in Brazilian territory, Equinor, Pontifical Catholic University of Rio de Janeiro (PUC-Rio) and Nuclear Technology Development Center (CDTN) are conducting a research and technology development study in order to map the solutions and practices already adopted by other countries –including Norway, United States of America and United Arab Emirates –and prospect viable solutions in Brazil for the disposal of low and intermediate radiation levels NORM generated by the oil and gas industry.

Altogether with the collaboration of local authorities, the project will encompass methodologies for final deposition, associated waste treatment technologies, viable locations for the disposal facilities, social-economical aspects, operating models, projection of waste inventories and review of the legal and regulatory framework, in order to guarantee a safe operation and an efficient administration of the repositories for their lifespan.

The study aims at understanding the technical and operational feasibility of the construction and installation of NORM repositories in Brazil, hence allowing the industry to have options for the destination of the waste and Brazil to have a holistic approach for NORM waste management.

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