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New regulatory framework for Radioisotopes Production in Brazil –Decommissioning aspects

The decommissioning stage is a challenge in licensing nuclear and radioactive installations worldwide. The decommissioning of radioisotope production facilities can generate tons of long-lived radioactive waste, requiring specific procedures for dismantling, demolition, packaging, and managing the radioactive waste generated. In Brazil, advances in the area of radioisotope production resulted in the publication of a recent regulatory framework for radioisotope production facilities with cyclotron accelerators, in which the decommissioning stage was considered from the construction stage, aiming at cost and radiological environmental impacts reduction, and sustainability. The regulatory framework establishes that, from the beginning of the project, a preliminary plan for withdrawing from the operation and adequate financial resources to cover the costs associated with the decommissioning, including the management of waste arising from this operation, also considering a possible premature decommissioning of the facility. Furthermore, the project must describe the removal layer for decommissioning, computational estimates for the activation of concrete and equipment components, and justify the constructive aspects chosen about radiological impacts and complexity for future decommissioning. The assessment of factors related to decommissioning in the pre-operational stages of the licensing process is an excellent regulatory approach aimed at sustainability and cost reduction in the decommissioning of radioisotope production facilities.

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