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Why should NORM be regulated under the existing exposure situations concepts to enable sustainability?

Sustainable development involves environmental, social, and economic dimensions. Radiological Protection System recommended by ICRP includes the optimization principle that considers economic, social, and environmental factors. Therefore, if safety regulation uses this principle as a driving force a perfect relationship between safety and sustainability would be reached, improving resource use and environmental protection. Exposure due to NORM is considered by ICRP as an existing exposure situation (EES), but not adopted as such by IAEA, therefore certain regulators control such exposures as planned exposure situation (PES). Although optimization should be applied to all types of exposures situations, in EES it is the driving force within a range of reference levels corresponding to acceptable values of risk; in the case of PES, the optimization has a secondary role below a value of risk too low to permit the acceptability of nuclear facilities. This conservative approach can impact the industrial sector, resulting in unjustifiable control. Brazil has many NORM-related industries, and the revision of the Brazilian Basic Safety Standard is proposing a graded, pragmatic, and flexible approach, considering ethical values. This allows safety to be related to sustainability without neglecting radiation safety. This paper will discuss all these issues using Brazilian BSS as a study-case.

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