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Evolution of the collective radiation dose from the nuclear reactors through the 2nd to the 4th generation.

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During operation of a nuclear reactor, the individual external doses received by staff are measured and recorded in accordance with regulations. The annual collective dose expressed in man.Sv/year can be assessed by summation. This information is a practical tool in order to compare different types of reactors. This article collects the trends of collective radiation dose for several reactor systems, relying mainly on the publications of the NEA and the IAEA for GEN II reactors and on a specific bibliography for sodium-cooled fast reactors and GEN III.

Doses from various sources received by the staff show a decrease, year after year, that seems mainly the result of two factors: the dissemination of good practice (optimization of operating conditions and organization, sharing of experiences, etc.) and a continuous improvement in the design of these reactors.

In the case of sodium-cooled fast reactors, a compilation and synthesis of various information, is provided to allow a comparison with the second and third generation reactors. Considering the results, it appears that the doses received in SFR operation are significantly lower.

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