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The use of ActiWiz in operational radiation protection

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The ActiWiz code has originally been developed at CERN for easy and quick assessment and comparison of the radiological hazard of materials used in the environment of high energy accelerators. Due to its foundations on nuclide production terms recent extensions have been developed to allow for an application also in the field of operational radiation protection.
An isotope build-up and decay engine has been developed to calculate nuclide inventories for arbitrary irradiation- and cooling period patterns. Automatic analysis of the dominating contributors to various quantities like radiotoxicity, clearance levels, photon dose-rate, gamma emission spectra etc. is provided. In addition, shielding of activated equipment, including the treatment of photon dose build-up factors, can be calculated within a few seconds even for nuclide sets with many thousands of gamma lines. The utilized initial nuclear inventories, including radioisotope production terms, can either originate directly from ActiWiz, from Monte Carlo codes like FLUKA, PHITS, MARS, MCNP or gamma spectroscopy measurements.
In this paper an overview of these new features and a benchmark comparison to shielding calculations with FLUKA and the analytic Nucleonica code is given.

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