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First version of a global inventory of radioxenon emissions from nuclear power plants

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Atmospheric radioactivity is monitored for the verification of the Comprehensive Nuclear-Test-Ban Treaty (CTBT). The xenon isotopes Xe-135, Xe-133m, Xe-133 und Xe-131m serve as important indicators of underground nuclear explosions. The treaty-relevant interpretation of atmospheric concentrations of xenon will be improved by a quantitative knowledge of the radioxenon emissions caused by civilian facilities. Therefore, we have evaluated North American and European nuclear power plant emission reports of the past decade to approximate typical annual radioxenon source rates for all operable nuclear power plant reactors worldwide. This presentation introduces to the first version of the radioxenon emission inventory and provides analyses of isotopic ratios, regional source distributions and other interesting findings resulting from this database.