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PAPER TITLE A MODEL FOR THE DETERMINATION OF MONETARY VALUES OF THE MAN-SIEVERT

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ABSTRACT (See instructions overleaf)

In order to implement protective actions to reduce radiological exposure "as low as reasonably achievable", the use of cost-benefit analysis has been progressively promoted among the practitioners, especially for the management of occupational exposures in nuclear power plants. Applying this procedure to the selection of radiological protection options, a monetary valuation of the avoided exposure has to be adopted (the so-called monetary value of the man-sievert), allowing for the expression of the benefit of protection in the same unit as the protection costs. The value of the man-sievert has to reflect the detriment associated with radiological exposures. As stressed by the International Commission on Radiological Protection (ICRP) in its Publication 37, it is necessary to evaluate not only the "objective" aspect of health detriment, but also the "subjective" one like the perception of risk by individuals. Moreover, in its Publication 60, the ICRP has recommended to take into consideration the dispersion of individual exposures. The integration of the equity aspects in the value of the man-sievert means that one accepts to pay more in order to avoid a unit of exposure when the individual level of exposure increases, and, moreover, that this increment of the monetary value of the man-sievert is more and more important.

This paper aims at presenting a model for the determination of the monetary values of the man-sievert dealing with the three following objectives: reduction of the collective exposure, reduction of the dispersion of individual exposures and reduction of dispersion in priority in the highest individual levels of exposure.