

**The Effect of Default Values in Regulation Matters**

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**Abstract**

Both performing and validating a detailed risk analysis of a complex system are costly and time-consuming undertakings. With the increased use of probabilistic risk analysis (PRA) in regulatory decision making, both PRA practitioners (usually, licensees) and regulators have generally favored the use of defaults because they can greatly facilitate the process of performing a PRA in the first place as well as the process of reviewing and verifying the PRA. The use of defaults can also ensure more uniform standards of PRA quality. However, different regulatory agencies differ in their approaches to the use of default values, and the implications of these differences are not yet widely understood. Moreover, large heterogeneity among licensees makes it difficult to set suitable defaults. This paper will focus on the effect of default values on estimates of risk. In particular, the following questions will be explored: "How should defaults be set?"; and "What are the implications of choosing different default values?" Some insights on the effects of different levels of conservatism in setting defaults will be provided. This can help decision makers evaluate the levels of safety likely to result from regulatory decisions.