

The Use of Analytical-Statistical Simulation Approach in Probabilistic Risk Analysis

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Abstract

Probabilistic Risk Analysis (PRA) in many industries is based on strong requirements from regulatory organizations. Mathematical methods should meet the requirements and include specific features, namely: rare event data analysis, complex system reliability, accident sequence safety function criterion uncertainty analysis, etc. In this paper, the analytical-statistical simulation approach (ASSA) is considered as the most flexible one and compared with Markov chain, fault/event tree, Monte Carlo in terms of accident model adequacy and calculation cost. PRA software PRAISE and some applications are given.