

反应堆工程

基于模糊逻辑方法的人误风险严重度识别

李鹏程^{1, 2}; 陈国华²; 戴立操¹; 张力¹; 赵明¹

1.南华大学人因研究所, 湖南衡阳421001 2.华南理工大学安全科学与工程研究所, 广东广州510641

收稿日期 修回日期 网络版发布日期:

摘要 在系统的可靠性和安全评价中, 不仅要关注硬件或软件失效引起的风险, 而且关注由人误引起的风险。本工作考虑人误可能对系统带来的风险, 建立一种基于模糊逻辑方法的人误风险评价模型, 识别人误风险的严重度及优先性。该方法不仅考虑人误概率, 且将人误影响概率与后果严重度二因子整合到人误风险评价模型中, 以满足概率风险评价的最终目的。同时, 该方法能模拟系统复杂的行为历程, 处理主观、模糊以及不确定的信息或知识, 较传统的确定性分析方法更符合实际。通过实例说明了该方法的具体应用, 表明该方法是可用的、可靠的、有价值的。

关键词 [模糊逻辑](#) [人误](#) [风险评价](#)

分类号

Fuzzy Logic-Based Approach for Identifying Criticality of Human Error Risk

LI Peng-cheng^{1, 2}; CHEN Guo-hua²; DAI Li-cai¹; ZHANG Li¹; ZHAO Ming¹

1. Human Factor Institute, Nanhua University, Hengyang 421001, China; 2. Institute of Safety Science and Engineering, South China University of Technology, Guangzhou 510641, China

Abstract In the system reliability and safety assessment, the focuses are not only risk caused by hardware or software, but also risk caused by “human error”. This paper considers the effects of risk of human error on system, and presents a new risk assessment model of human error based on fuzzy logic used to determine risk prioritization of human error. The method not only considers the human error probability, but also integrates the error-effect probability and consequence severity into the risk assessment model to satisfy the objective of probability safety assessment. At the same time, the method can model the complex system behavior to deal with subjective, vague and uncertain information or knowledge and it is more realistic than traditional method. A case example is presented to demonstrate the proposed approach. The results show that the method is practicable, reliable and valuable.

Key words [fuzzy logic](#) [human error](#) [risk assessment](#)

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