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Reliability Engineering & System Safety

Volume 100, April 2012, Pages 28– 32



Technical note

Estimating Human Error Probability using a modified CREAM

Zhiqiang Sun^a, Zhengyi Li^b, Erling Gong^a, Hongwei Xie^a

^a College of Mechatronic Engineering and Automation, National University of Defense Technology, Changsha 410073, China

^b Department of Computer, Changsha Social Work College, Changsha 410004, China

<http://dx.doi.org/10.1016/j.res.2011.12.017>, How to Cite or Link Using DOI

Abstract

Human Error Probability (HEP) point estimation is important for Probabilistic Safety Assessment (PSA) of socio-technical systems. We present a modified basic method of CREAM to provide the point estimation of HEP for PSA. Five acknowledged assumptions are introduced firstly and the HEP point estimation formula is elicited based on them. Furthermore, the reasonability of the method is discussed and the consistency with other two benchmarking HRA methods, THERP and HEART is validated. Finally, a simple example about starting up the submarine's engine is introduced and the probability of the error *forgetting the warm operation* is calculated using the modified method. The result of the method is consistent with the recorded human performance data and THERP.

Keywords

Human Error Probability; Human reliability; CREAM; Common performance condition

Figures and tables from this article:

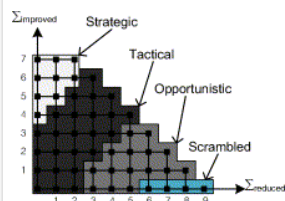


Fig. 1. Determination of control modes.

Figure options

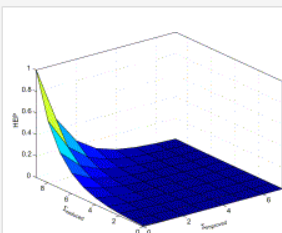


Fig. 2. Control modes and HEP intervals.

Figure options

Table 1. The HEP interval corresponding to each control mode.



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Table 2. The results of basic method of CREAM and formula (5).



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Table 3. The comparison with THERP.



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Table 4. The states of 9 CPCs.



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Corresponding author. Tel.: +86 7314573369.
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