

## عنوان مقاله:

Applying the System-Theoretic Framework to Model Organizational Aspect of Safety Control Structure

## محل انتشار:

چهارمین کنفرانس بین المللی مهندسی قابلیت اطمینان (سال: 1395)

تعداد صفحات اصل مقاله: 15

## نویسندگان:

Ahmad Dehghan Nejad - *Department of Safety Engineering, Faculty of Health, Safety and Environment, Shahid Beheshti University of Medical Science (SBMU), Tehran, Iran*

Reza Gholamniya - *Department of Safety Engineering, Faculty of Health, Safety and Environment, Shahid Beheshti University of Medical Science (SBMU), Tehran, Iran*

Ahmad Alibabaei - *Department of Safety Engineering, Faculty of Health, Safety and Environment, Shahid Beheshti University of Medical Science (SBMU), Tehran, Iran*

Sara Ghanbari - *Department of Civil Engineering Technology, Environmental Management & Safety, Rochester Institute of Technology, Rochester, NY, USA*

## خلاصه مقاله:

Following the principles of the systemic accident models and in particular, based on the STAMP (Systems-Theoretic Accident Modeling and Processes) causal model and STPA (System Theoretic Process Analysis) risk analysis method, this paper focused on organizational aspect of hierarchical safety control structure in complex socio-technical systems. In this regard, a new framework was offered and tested to model organizational Feedback Control Loops. In fact, the STPA risk analysis method has been accommodated for deficiency analysis of organizational aspect of hierarchical safety control structure. Accordingly, a new framework together with an explicit guideline has been introduced and presented that can model the Organizational Feedback Control Loops and their particular Process Models. With respect to this framework and procedure, the STPA has been applicable for analysis of Organizational Control Mechanisms that participate in control structure of complex socio-technical systems. The presented framework was applied in a sample system that is utilized for civil helicopter maintenance. By applying this framework and its customized Process Model, the Organizational Control Mechanisms of this sample system was modeled and analyzed with respect to STPA method. In conclusion, in this paper have been shown that an accommodated version of STPA can apply accurately to analyze organizational mechanisms that may have detrimental effect on safety of Complex Socio-Technical Systems.

## کلمات کلیدی:

Complex Socio-Technical Systems, Hierarchical Safety Control Structure, Organizational Control Mechanism, Feedback Control Loop, Systemic Accident Models

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/751590>



