

Calculation Automates the Decision?: Socio-Technical Perspectives of Simulation Technology for Nuclear Risk Evaluation

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It is a widespread notion that quantitative calculation of technological risk should help our better decisions concerning risk management and emergency response for nuclear utilization. However, sometimes it is believed more than to “help” the decision, but to “automate” it. After the Fukushima nuclear accident in 2011, it has been criticized that the Japanese nuclear community were overdependent on such a belief, while neglected to establish the capacity and institutional framework to utilize it in appropriate manner.

Our qualitative study revealed that this kind of belief is still alive, although a lot of efforts to overcome it. We have witnessed highly polarized and stereotyped disputes: for example, System for Prediction of Environmental Emergency Dose Information (SPEEDI) are deemed either totally useful, or utterly useless. The imaginaries held by relevant stakeholders on methods of risk quantification and its consequences are contested, but at the same time partly unanimous.

To analyze the mechanism which persistently reproduces the “Calculation Automates the Decision” belief, the author conducted a study on the policy process centering on those simulation techniques. He recently co-authored a book chapter on the SPEEDI case, in which they discussed the dysfunction of this belief, such as the obstruction of practical, effective implementation of such technologies. Socio-political interactions among relevant actors, technical concepts, legal frameworks and social atmosphere will be critically analyzed, to identify the key factors which encouraged the very particular evolution process of institutional psychological overdependence on the belief. The author believe that he could contribute to the discussion centering on the risk caused by possible strong ground motion by major inland earthquake.

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