INHERENTLY RISKY REACTORS?

The History of Soviet Reactor Design Choices and the Notion of Safety.

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After the Chernobyl catastrophe in 1986, many asked the question why Soviet nuclear experts chose the RBMK (the "Chernobyl-type reactor") as a standard design for implementation all over the Soviet Union. Implicit in this question were assumptions about the RBMK's inherent risks: why would anyone select a technically flawed reactor, and let insufficiently trained technicians operate it? Often, the Soviet system with its tightly integrated economic plans and political program has been blamed, again implying that "this could never happen here" (wherever the "here" might be). The Fukushima accident has complicated such straight-forward assignments of blame: severe accidents in American designed reactors, in a high-tech nation that adheres to democratic, free market principles could not be explained away as easily.

This talk will show that the choice of reactor designs rarely follows strictly technical criteria: designs are chosen not because they are the best or most functional ones available. Which design "works" and what exactly that means always depends on multiple factors, such as industrial capacity, familiarity with operating similar designs, and the clout of different institutes or companies. To explain why some technical configurations acquired momentum and eventually succeeded, while others faltered, we need to look beyond individual career ambitions, dysfunctional organizations, and political alliances. Based on extensive archival research in Russia and on interviews with veterans of the Soviet nuclear industry, I argue that a line of reasoning that triumphantly identifies in retrospect where things went wrong obscures the fact that what we consider safe (and, conversely, risky) is not a universal notion.

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Free event. Refreshments provided. All are welcome. Contact Max Henderson pgsa-mail@einstein.physics.drexel.edu

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