

ANALYSIS OF EFFECT OF COOLANT INJECTION PARAMETERS ON MITIGATION OF REACTOR CORE MELTING ACCIDENT USING PCTRAN

Chuanbin Li

National Research Tomsk Polytechnic University,

Russia, Tomsk, Lenin str., 30, 634050

E-mail: qq1075356371@gmail.com

So far, three nuclear accidents of the highest hazard level have occurred in the world, and the causes are all caused by the meltdown of the core caused by the loss of water, resulting in a radiation disaster. Therefore, it is important and necessary to study how to inject coolant after the accident to avoid as much as possible serious results. First, we use software PCTran to simulate the process of LOCA running with blockout and other setting, then simulate the process about different injection rates at same water levels and the same injection rate at different water levels and the cooling effect of the coolant after the fuel has been fully melted. Finally we can get the relationship between coolant injection parameters and effects of cooling. After a series of repeated experiments, we found that the coolant injection rate and injection time have a direct impact on the accident mitigation and whether the container will be melted through.

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NECESSARY NUCLEAR SECURITY MEASURES FOR THE CONSTRUCTION AND OPERATIONS OF A NUCLEAR POWER PLANT IN THE FEDERAL REPUBLIC OF NIGERIA

Orumo B. Kenoll^{1,2}, Furo E. Ebiere^{1,2}

¹National Research Nuclear University Moscow Engineering Physics Institute,
Russia, Moscow, Kashirskoe hwy, 31, 115409,

²Nigeria Atomic Energy Commission,
Nigeria, Abuja, Asokoro, Kwame Nkrumah Cres, 9, 900231

E-mail: orumokenoll@yahoo.com

The Nigerian economy needs adequate power for its growth since commercial, Industrial and Domestic activities all rely on electricity for its daily needs and smooth operations. Demand for nuclear energy is on the rise in Nigeria as a credible option in ensuring the availability of great amounts of energy. This optimism about nuclear