Nonlinear Dynamic Analysis of the Aircraft Impact to the NPP Structures

Juraj Králik[1], Juraj Králik jr.[2]

[1]Faculty of Civil Engineering, STU in Bratislava, Radlinského 11, 810 05 Bratislava, Slovakia, e-mail: juraj.kralik@stuba.sk

[2]Faculty of Architecture, STU in Bratislava, Námestie Slobody 19, 812 45 Bratislava, Slovakia, e-mail: kralik@fa.stuba.sk

This paper presents the nonlinear analysis of the reinforced concrete buildings of nuclear power plant under the aircraft attack. The response from the nonlinear analysis was considered taken the deterministic calculation procedures. The dynamic load is defined in time on base of the airplane impact simulations considering the real stiffness, masses, direc-tion and velocity of the flight. The dynamic response is calculated in the system ANSYS using the transient nonlinear analysis solution method. The damage of the concrete wall is evaluated in accordance with the standard NDRC consid-ering the spalling, scabbing and perforation effects. The simple and detailed calculations of the wall damage are compared.

Keywords: Nonlinear, Dynamic, Aircraft, NPP, ANSYS

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