A. Kuchin, I. Ovdiienko, V. Khalimonchuk

*State Scientific and Technical Center for Nuclear and Radiation Safety, Kyiv, Ukraine*

**WWER Safety Analysis in Case of Simultaneous Introduction of Positive Reactivity by Withdrawal of Control Rods and Injection of Pure Condensate**

*The positive reactivity introduction rate is calculated for conditions of simultaneous effect on reactivity of two reactivity control systems incorporated in the WWER design: withdrawal of control rods and decrease in boric acid concentration. It is shown that the maximum positive reactivity introduction rate is achieved at hot zero power and is much lower than the limit of* $0.07\beta_{eff}$*/sec determined by the regulation "Nuclear Safety Rules for NPPs with Pressurized Water Reactors". On this basis, it is concluded that the actuation time for preliminary protection PZ-2 should be increased in the interval of pure condensate transport to completely exclude potential introduction of positive reactivity simultaneously by two different reactivity control systems.*

*Keywords: WWER, safety analysis, reactivity.*