V. Borysenko¹, D. Budik², V. Horanchuk¹

¹Institute for Safety Problems of NPP, National Academy of Sciences of Ukraine, Kyiv, Ukraine

²Research and Production Association “Impulse-Kyiv”, Kyiv, Ukraine

Application of Methods for Analyzing Noises in VVER Diagnostic Systems

The paper provides some research results obtained from the application of the diagnostic systems based on noise analysis methods and presents the history of implementing of noise diagnostic systems starting from the first VVER up to the present time. The research considered physical peculiarities of defining vibration parameters of reactor internals and fuel assemblies, as well as other parameters important to safe VVER operation. The paper presents the spectrum of the noise component of neutron detectors located in the core and outside the reactor pressure vessel. The main attention is paid to the capability of the comprehensive system to present diagnostics of such tasks, as the definition of coolant rate through the core and temperature coefficient of reactivity.

Keywords: noise diagnostic system, vibration parameters of reactor internals, vibration parameters of fuel assemblies, coolant rate, temperature coefficient of reactivity.