10. SUPERCODUCTIVE ELECTRON ACCELERATOR FOR SUB-CRITICAL ASSEMBLY OPERATION

M. I. Bratchenko, V. V. Gann, I. S. Guk, A. N. Dovbnya, S. V. Dyuldya, S. G. Kononenko, F. A. Peev, A. S.Tarasenko, M. van der Wiel, J. I. M. Botman

The possibility of the application of superconducting electron linear accelerator as a driver for the prototype of future accelerator-driven nuclear power plants with sub-critical assemblies is considered. The linac will operate in continuous-wave mode with maximal pulse repetition rate of 13 MHz. The maximal electron beam energy will be 130 MeV with average current 1 mA. For selected design of sub-critical assembly the neutron fluxes inside the neutron production target, core and reflector have been calculated by means of the ORNL *SCALE5* code, as well as using the *Geant4*-based *RaT* 3.0 code developed in NSC KIPT.