

CONTROL POWER SUPPLY SYSTEM FOR ELECTROMAGNETIC ELEMENTS FOR TECHNOLOGICAL LINAC

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Abstract

Single section technological LU-10 electron linac * is located in National Scientific Center "Kharkov Institute of Physics and Technology". The linac has got the following specifications: beam output energy 10 MeV, pulse current up to 1A, pulse width up to 4 mcs, repetition rate 300 Hz. Average beam power is up to 10 kW. The accelerator is dedicated for electron-beam sterilization. Beam forming line consists of four magnetic lenses and four steering coils. The article describes the upgrade of the power supply system for electromagnetic optic elements of the LU-10 accelerator. Power suppliers of magnet optic elements have been replaced at the beginning of the 2009. Programmable power supplies equipped with intellectual controllers with CANopen interface took the place of the old ones. The power suppliers ensure current drive in the coils of magnet elements with 0,05% stability. The suppliers control continuously load characteristics (checking both voltage and current) and initiate beam off signal when load changes due to coil-winding short circuit or other reasons. Structure of the power supply control system software is described as well as results of the system tests.

**CONTRIBUTION NOT
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