

THE CONTROL OF GENEPI, A GENERATOR OF PULSED INTENSE NEUTRONS.

S. Albrand, Isn Grenoble; A. Patti, Isn Grenoble; M. Planet, Isn Grenoble; J.C. Ravel, Isn Grenoble

GENEPI is a generator of pulsed intense neutrons constructed for one of the experiments of the GEDEON project, the purpose of which is to investigate the properties of accelerator driven reactors. GENEPI is at present in use at the ISN for preliminary measurements, and will be installed for the injection of pulsed neutrons into the core of a small scale nuclear reactor. Pulsed ion beams are produced, focused and accelerated onto a tritium target. The duoplasmatron source and extraction system must be at a potential of 250 kV, and part of the control system must also be housed on the HV platform. The relative lack of space available and the HV requirement lead us to adopt a solution based on PC104 single board computers. Acquisition interface cards were developed at the ISN Grenoble. About 15 of these computers are needed to control the various elements of the accelerator, which are in majority power supplies. The user interface is on a Windows NT platform. The control system communication is by TCP and UDP over a fiber optic network.