Figs. A.6.3(a) and (b) show the stability of the beam during one of the injections and storages respectively. For stable beam during injection, situation is confirmed with respect to the beam position monitoring of the beam on the particular day. During the storage of 2.5 GeV electron beam, the beam stability is observed around 25µm.

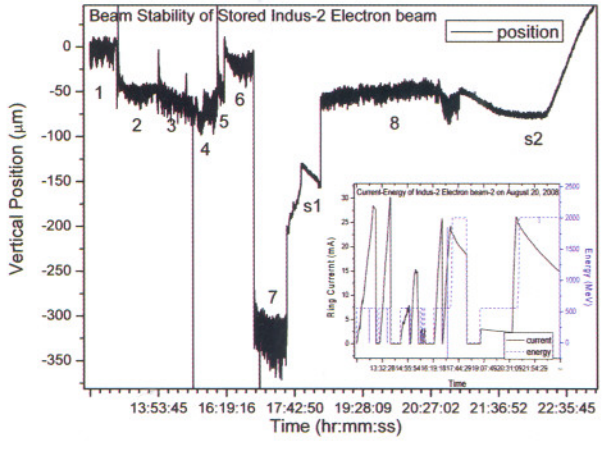

Fig. A.6.2: Intraday beam stability during several injections (number. 1-8) and storage events (number s1-s2), (inset) current energy profile of Indus-2 SR source.

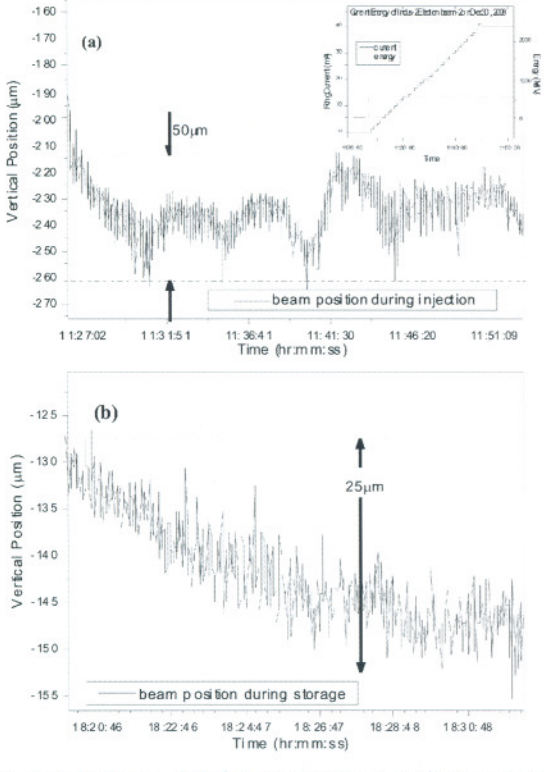

Fig. A 6.3: Beam stability measurements during (a) the injection of 0.5GeV electron beam (inset) current filling rate and (b) the storage of 2.5GeV electron beam.

It is possible to track the movement of electron beam position with designed and installed XBPM on BL-12. The careful optimisation of XBPM leads us to achieve a beam position resolution of less than 5µm in the dynamic range of ± 500 µm. Regular monitoring of beam position using XBPM is in progress, to further qualify the beam position on intraday basis.

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A.7: Utility Modules For Indus-2 Control System Layer 3 Monitoring

Utility Module (UM) was developed by Accelerator Controls Section (ACS) for supervising Equipment Controllers(EC) installed at layer-3 in Indus-2 Control system. UM is a microcontroller based unit consisting of 8 channels for digital outputs, 8 channels for digital inputs, 8 channel for Analog inputs, three RS-232 ports and one RS-485 port. Different UMs connect to PC with RS-485 port in a multi-drop fashion on RS-485 link. PC acts as a master and various UM units as slaves. The basic functions performed by the UMs are as follows-

Controls- ON/OFF control of the Equipment Control Stations (ECS) enclosing the Equipment Controllers (EC) and Reset activation of the ECs.
Status- Mains ON/OFF status of the ECS, EC P/S ON/OFF status.

Analog Parameters Monitoring- It has facilitated Mains voltage monitoring, EC's temperature monitoring, EC VME P/S voltage monitoring and other Linear P/S voltage monitoring.

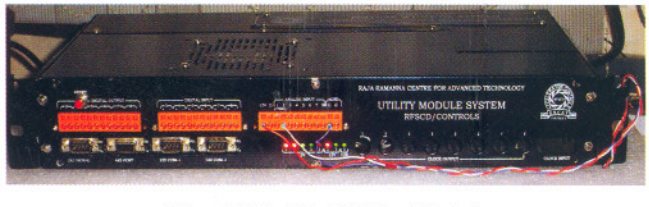

Fig. A.7.1: The Utility Module

Serial Port Connectivity with ECs at Layer 3 – It has provided connection with L3 VME master controller serial port and facilitated downloading of OS-9 modules to VME master controller from control room.

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