

CONTROL SYSTEM FOR SIDDHARTH MEDICAL LINEAR ACCELERATOR

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Abstract

Indigenously developed 6 MV SIDDHARTH* Medical Linear accelerator is successfully installed and commissioned at two different locations in India. So far more than 30,000 various cancer patients has been treated using SIDDHARTH Medical Linear Accelerator at both locations. The SIDDHARTH Medical Linear accelerator is an electrical medical equipment type approved by Atomic Energy Regulatory Board, India for radiotherapy treatment of Cancer patients. Its control system is Supervisory Control and Data Acquisition (SCADA) Human Machine Interface (HMI) based along with CE marked industrial Modbus** controllers embedded within Medical Linear accelerator. The control system has qualified IEC-60601-1-4 standard for safety of programmable electrical medical systems and very easy to use, maintain. It possesses all necessary interlocks for personnel and machine safety. The safety risk analysis is done in accordance with ISO 14971. The design approach used is simpler one leading to shorter development cycle. The control system design philosophy for SIDDHARTH Medical Linear Accelerator is discussed in this paper.

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