



VVER-1000 RPV Head Examination Control System

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This article presents the electronic system used for automated NDT examination of VVER-1000 Reactor Pressure Vessel Head (RPVH). The control system drives the inspection tool with end-effectors to needed position. When the final position is reached, the eddy current and ultra sound acquisition system performs the data acquisition. The system is composed of 3 layers. The first layer is the hardware layer consisting of motors driving the tool and end-effectors along with sensors needed to obtain the positioning data. The second layer is the MAC-8 control system performing basic monitoring and control routines as an interconnection between first and third layer. The third layer is the control software, running on PC, which is used as a human-machine-interface. Presentation contains details of examination techniques with focus on eddy current examination as well as details on manipulator and end effectors developed by Inetec for VVER-1000 RPVH examination.

Keywords: VVER pressure vessel head, eddy current and ultrasonic testing, multi-axis control system, human-machine-interface