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Machine interlock system for accelerator section in PAL-XFEL

Monday, 20 May 2024 16:00 (2 hours)

Laser, MPS, Modulator, Vacuum, LLRF, etc. are installed at the Pohang Accelerator Laboratory-XFEL linac section. Each device must be protected against emergency situations. When an interlock signal occurs in the XFEL linac section of Pohang Accelerator Research Institute, the beam shutter is closed using the PLC and the operation of each device is blocked. We used an Emerson PLC and connected the interlock signal to each device with a cable to the terminal block.

The operating status of devices required for accelerator operation is displayed on the driver's cabin HMI, providing the driver with the information necessary for accelerator operation, and storing changed status data in real time. If the MIS is abnormal, beam operation is impossible, so the CPU and communication are each configured as redundant.

Footnotes

Funding Agency

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Region represented

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