



Contribution ID: 66

Type: **not specified**

PO30 - Report on Alarm Management of synchrotron SOLEIL

Tuesday, 12 September 2023 15:10 (20 minutes)

“The SOLEIL synchrotron radiation facility was commissioned in 2006 and today supplies photon beams to 29 beamlines, with a maximum intensity of 500 mA during 5000 hours per year. Over the last few years the operation group, with the help of the Acquisition and Control Systems Engineering group, has been heavily involved in the fine integration of the new PANIC alarm management system into the control room. This system is a very valuable tool for the operators and contributes to the global effort to ensure the availability and reliability of the electron and photon beams: to achieve a beam availability of more than 99%, a mean time between failures (MTBF) of 100 hours, and a mean time to recover (MTTR) of 1 hour.

To reach such ambitious goals, it is essential to design seamless tools, well integrated into the control system, tailored to the safety operators' needs, linked to our knowledge database. The alarm system must be finely tuned to monitor at the good level accelerator systems such as power supplies, pulsed elements, diagnostics, utilities and radiation protection based on our knowledge of the equipment and our software portfolio.

The integration process involved the custom design of the PANIC alarm management system based on these identified needs, as well as the meticulous installation of sensors and monitoring devices. For example, temperature and pressure sensors are installed to monitor the accelerator cooling systems, and the storage ring emittances are monitored to take action if the measurement fails. The fundamental importance of training control room operators in the use of the PANIC alarm management system and providing them with quick access to the procedures and associated documentation is also emphasized to ensure its continued proper functioning. These concrete measures help to maintain the desired level of availability and reduce MTTR.

The successful integration of the PANIC alarm management system into the control room of the SOLEIL synchrotron helps us to improve our efficiency and responsiveness in emergency situations. For example, if an alarm is triggered due to overheating of the power supplies, the PANIC system immediately sends a notification to the operators, opens the documentation in our Confluence-based knowledge database, and allows us to quickly take preventive measures. By sharing our work and experiences, we aim to actively contribute to collective learning and performance improvement in other similar facilities.”

Presenter: TREVARIN, Didier (SOLEIL)

Session Classification: Poster / Demo Sessions