

The ESRF Beamline Personnel Safety System,
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Beamline Personnel Safety System (PSS) uses the dual
guardline interlock modules developed at SERC
Daresbury Laboratory for the SRS¹. The system has
therefore been designed as a hardwired, relay based
fully redundant system. Because of the large number
of systems required at the ESRF (approximately 30
systems have been installed to date), the PSS was
designed as a modular system, the basic system dealing
with one optics and one experiments hutch, with plug-
in modules for extra hutches. The redundancy of the
system is guaranteed both via the individual hardware
(double contact emergency switches, two door contacts
per door,...) and via the implemented logics: in case of
a problem, at least two independent elements will be
tripped, e.g. experimental shutter and front end shutter.
Accidental tripping of the search in an optics hutch
with open front therefore immediately trips the storage
ring electron beam. After a few years of operational
experience, the number of accidental beam trips is very
small. On-line monitoring of the status of the system is
available on the beamline. The paper describes in
detail the logic diagrams as well as the system's main
hardware.

1 The Daresbury Personnel Safety System by
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Laboratory.