To ensure that the personnel does not suffer from high-dose radiation damage when they stay in the radiation control zone, in addition to the passive trip beam protection mechanism provided by the person pressing the emergency stop button, the dump beam active protection mechanism is also provided via the safety chain system. The method thereof is the physical signal of the off state of the front-end zone Heavy Metal Shutter, and then it is combined with all the access limit switch signals and the Photon Shutter switch signal to achieve a personal security protection design with level higher than that of the immediate active personnel security protection.

**ACTIVE TRIP BEAM PROTECTION MECHANISM**

To ensure that the personnel does not suffer from high-dose radiation damage when they stay in the radiation control zone, in addition to the passive trip beam protection mechanism provided by the person pressing the emergency stop button, the dump beam active protection mechanism is also provided via the safety chain system. The method thereof is the physical signal of the off state of the front-end zone Heavy Metal Shutter, and then it is combined with all the access limit switch signals and the Photon Shutter switch signal to achieve a personal security protection design with level higher than that of the immediate active personnel security protection.