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Review of irradiated cables in the SPS

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The SPS accelerator complex includes roughly 127000 electric power and control cables. The selection criteria for cables are stated in the CERN-IS23 safety instructions that require retention of the cable functional capabilities up to an integrated radiation dose of 0.5 MGy for general-purpose cables and 10 MGy for special radiation resistant cables. In some SPS areas the cumulated dose over the past 33 years already exceeds those values. According to a replacement program defined in 1990, the control cables of a specific zone were partially or entirely replaced every year while the DC cables were never replaced. The progressive increase over time in the number of installed systems and cables makes the replacement campaigns more and more difficult and time consuming. As a consequence the criteria to be followed in the evaluation of the cable status become fundamental. This presentation summarizes the results of past cabling activities reporting on the overall conditions of the cables. A reflection about the cable replacement strategy is also proposed.

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