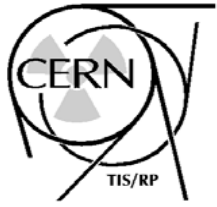


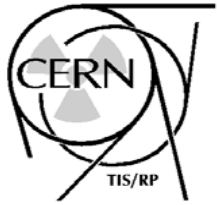
ISOLDE Intensity Upgrade

- Radiological safety issues are proportional to number of protons on target:
- Targets survive only a given number of protons
 - more targets have to be produced
 - more target changes
 - more radioactive waste
 - Survival time of Front-End ?
- Activation by long-lived radionuclides is proportional to intensity:
 - more gaseous and aerosol discharges
 - increase of dose rates in target area



Studies Required for an Intensity Increase Project

- Stray radiation from transfer line PSB-ISOLDE
- Stray radiation in Bat. 179
- Stray radiation in experimental hall
- Aerosol and gaseous discharges (modification of the ventilation for recirculation)
- Activation and contamination levels in target area, incurred personal doses (based on realistic reliability figures of the facility)
- Additional interim waste storage on CERN site

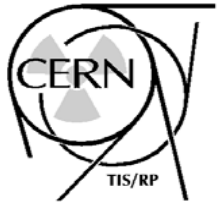


The Bottleneck: Maintenance of ISOLDE

- LHC: personal dose constraint of 5 (or 6) mSv/year. Will become a CERN-wide guideline
- Experience at ISOLDE in past years: this constraint can **just** be met at present activation levels

Person	2003
R. C.	4.4 mSv
J. L.	3.0 mSv
St. M.	2.8 mSv

- An increase of intensity must be accompanied by an at least proportionally improved **reliability** of the separators.



Task List

Transfer PSB-ISOLDE	estimation	TIS-RP
Radiation Bat 179	Measurement additional shielding	TIS-RP AB / ST
Radiation exp. hall	(Monte Carlo estimation additional shielding	N.N) AB / ST
Discharges	Modify Ventilation Measurement/calculation	Condsolidation TIS-IE, RP
Activation/Maintenance	(Monte Carlo estimation Reliability (new FE)	N.N) AB
Radioactive Waste	Monte Carlo estimation Waste handling/storage	N.N AB / TIS