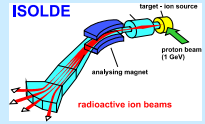


ISOLDE Technical report May 2005

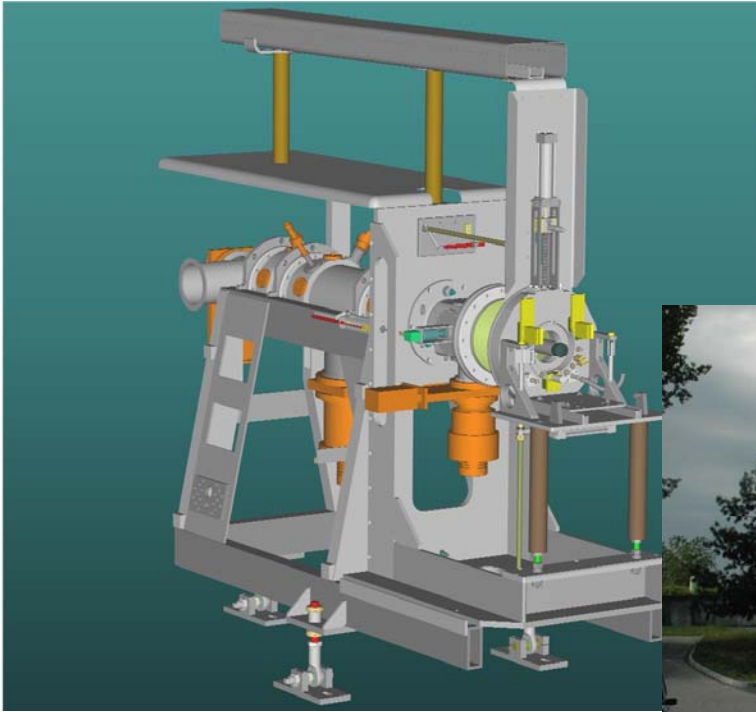
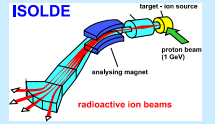
*Mats Lindroos on behalf of
CERN ISOLDE team*



Shutdown



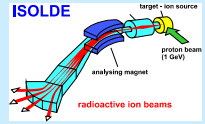
- *Maintenance work*
- *Class A lab completed*
 - *Building and ventilation system completed*
 - *Late request full-filled for higher chimney*
 - *Equipping of lab started, full functionality in summer 2005*
- *All scanners re-aligned and aperture of faraday-cups changed to 26 mm*
- *FE6 completed*
 - *Spare for 2005 run*
 - *Ceramic insulator brazed and will be mounted in the next shutdown*
- *Sparking problem at GPS understood*
 - *Anodisation of aluminum covers*
 - *Bundling of cables in "Boris tube"*
- *RILIS fitted with independent cooling water system*
 - *Shielding added to protect staff in RILIS room*
- *New access system for separator areas*
- *New isolation transformers for GPS/HRS fitted*
 - *Low leak current*



Mats Lindroos



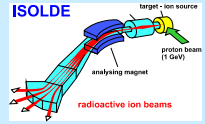
Developments



- *RFQ cooler parts manufactured*
 - *Assembly to start in June, completion for September*
 - *Plans being made for putting it online in 2006 (end of run)*
- *Mercury (Hg) ionization scheme developed for RILIS*
- *Balzer system moved to radioactive laboratory close to the workshop*
 - *Two person rule for all work at this system enforced*
- *Vibration and thermal shock wave test in targets performed*
- *Target with graphite lined line built and tested off-line (oxygen beams)*



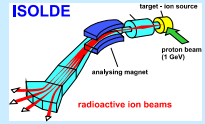
REX-ISOLDE



- *Maintenance work done*
- *EBIS boil-off rate reduced after major intervention of superconducting coil*
- *New control system for REX trap*
- *First tests with new controls for power supplies*
- *202 MHz cavity repaired*
 - *Still not to specifications (for 2006)*
- *Additional support received on long-term basis for AB-ATB and AB-OP*



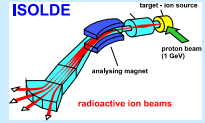
REX-ISOLDE



Mats Lindroos



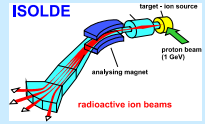
Start of run



- *Good:*
 - *Successful parallel operation of HRS and GPS*
 - *HRS is well suited to remove low mass contamination ($m/\Delta m=3000$)*
- *Not so good*
 - *Two broken targets in sequence on GPS and HRS*
 - *Graphite lining?*
 - *HRS slits still without remote control*
 - *General problem with ISOLDE encoders*
 - *Poor response time for ISOLDE controls*
 - *10 seconds now -> should be 100 ms*



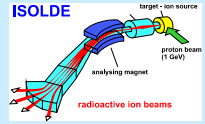
Experimental hall



- *Hall extension completed*
 - *Ventilation, cooling water and electric supplies in next phase*
- *Technical support re-organized*
 - *Under the responsibility of ABT-IF*
 - *Staff from AB-OP*
 - *New drawings to be produced under the responsibility of Stefano Marzari*
 - *Annual budget of 250 kCHF proposed in AB budget for 2006*



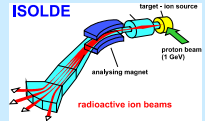
Hall extension



Mats Lindroos



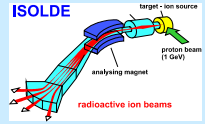
Gas recovery system at ISOLDE



- *Present gas recovery system dimensioned for targets, front-ends and separators*
- *REX-TRAP and RFQ cooler operation requires that exhaust gas is collected in recovery tanks*
 - *Temporary permission to run REX in 2005 with additional monitoring*
 - *New recovery tank needed*
 - *New recovery line system needed*
 - *Primary pumps for hall to be moved*



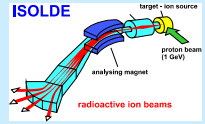
New technical staff at ISOLDE



- *AB-ATB group leader*
 - *Jacques Lettry*
- *AB-ATB-IF section leader*
 - *Richard Catherall*
- *AB-ATB-IF Target physicist*
 - *Thierry Stora*
 - *Etam Noah (1 July)*
 - *Elían Bouquerel (MC fellow)*
- *AB-OP-IS*
 - *Magnus Eriksson*
 - *Pascal Fernier*



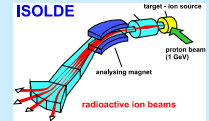
HIE-ISOLDE



- *Up-grade of ISOLDE facility - technical objectives*
 - *To benefit from injector upgrades as CERN*
 - *900 ms cycling of PSB*
 - *Linac 4*
 - *Fission fragments at 160 MeV/u?*
 - *To increase the energy and intensity of REX-ISOLDE*
 - *TRAP/EBIS upgrades and possible ECR source in parallel*
 - *First stage to 5.5 MeV/u*
 - *Second stage in collaboration with IHEP to 10 MeV/u*
 - *To improve the beam quality at ISOLDE*
 - *RFQ cooler: Controlled time structure, smaller transverse emittance and lower energy spread*
 - *EBIS and ECR: High charge state beams for more Users*
- *To be presented in full at INTC NUPAC meeting*



HIE-ISOLDE



Total material cost (kCHF):	15290								
Total external (kCHF):	5110								
Total CERN (kCHF):	10180								
Year:		2004	2005	2006	2007	2008	2009	2010	2011
Annual external:		255	180	1480	360	1060	775	500	500
Annual CERN:		0	20	1405	1800	4380	1775	550	250
Annual totals:		255	200	2885	2160	5440	2550	1050	750

Total personyear:	42.5								
Year:		2004	2005	2006	2007	2008	2009	2010	2011
Annual staff in personyear:		1	2	3.5	6.5	13.5	6.4	5.1	4.5

All costs in kCHF

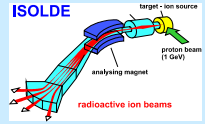
External contributors	Material (kCHF)	Comment
ISOLDE collaboration	775	Available from 2006
IKS Leuven, BE	900	Approved
ISTC, EU and RU	2000	Application being prepared
EPSCR, UK	255	Approved
VR, SE	830	Applied for
BMBF, D	350	Design study already approved
Total	5110	

Associated approved projects	Material (kCHF)	Staff (FTE)
EURISOL DS Targets	100	7
EURISOL DS Safety		2
EURISOL DS Beampreparation		3
EURONS chargebreeding		1
EURONS mass separators		1
Total	100	14

Mats Lindroos



General comment



- *All CERN activities up until 2007-2008 happens second to the LHC project*
- *ISOLDE is doing very well*
 - *Class A lab and hall extension approved*
 - *ISOLDE running in 2005 (and probably in 2006)*
 - *New work package for technical support in the ISOLDE hall*
- *We depend more than ever on external support*
 - *Both moral and material*
 - *Thanks for all your support*