CNGS electronics tests

status in October 2009

Last access for slot 6 was on 7 October 2009.

End of beam foreseen for
24 November 2009 (W48)

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Changes during last access

- Photos available at \\cern.ch\dfs\Users\g\gspiezia\Public\cngs_access7oct
- CRYO terminated the tests (equipment in temporary Radioactive storage)
- Survey moved from TSG46 to 45 (BPM S2 calibration to be used in the tool)
- New equipment from TE/EPC installed and one FGC generic replaced (with upgraded analog card)
- Activation foils removed (Au)
- FipDiag reinstalled for the Station 4 (?)

- Bug for QPS S2 position corrected in the tool

Summary table of the ongoing and finished tunnel electronics tests in CNGS

	1MeV n eq. [cm^{-2}]	Dose [$Gy(SiO_2)$]		Short comment
BLM	7.1e12	300		Tunnel card still OK (1 reset needed), all PS down
CRYO	4.2e12?	130?		Tunnel cards OK Test finished
HTS CL	4.2e10	3.6		1 out of 4 modules down Reset yet to be done
Survey	1.6e11	9.0		OK, but data to be analyzed
BIC/PIC	3.0e12	125		1CPLD 5V died so far
WFip	4.4e11	21		New repeater for slot 5 and 6 - OK
BPM	2.1e12	123		Tunnel Card OK Test finished
TE/EPC	4.4e11 7.4e10	18 3.0		3xSEL for FGC COD (1xSEL for FGC generic)
QPS				

FGC Generic Power converter status (Sylvie Dubettier)

- 6071 SEUs counted on FGC COD memories, all 100% corrected (EDAC)
  - EDAC and memory corruption detection works.
- Results from Memory corruption deduced fluence by FGC and RadMon values are close.
  - Louvain Results ≈ CNGS Results.
- 42 SEU on register C32, HC16 and WFIP counted (could crash software if critical register). Most of corruption are on the WFIP registers.
  - Software Update with corruption detection feature will be developed on 2009.
- 18 Gy on FGC Generic, and no influence seen on components (Louvain showed that critical limit was below 120 Gy).
- High Precision Digital filter corrupted many times. Would impact on the high precision current level (operation & calcul. phase corrupted)
  - Software Update with digital filter corruption detection feature for 2009 or new card (SD360, in test at CNGS – SO FAR OK).
- 1 crash not explained but manual-recovering using hardware Power Cycle implemented feature each time.

FGC COD Power converter status (Sylvie Dubettier)

- 1592.. SEUs counted on FGC COD memories, all 100% corrected (EDAC)
  - EDAC and memory corruption detection works.
- Results from Memory corruption deduced fluence by FGC and RadMon values are close.
  - Louvain Results ≈ CNGS Results.
- 49 SEU on register C32, HC16 and WFIP counted (could crash software if critical register). Most of corruption are on the WFIP registers.
  - Software Update with corruption detection feature will be developed on 2009.
- 18 Gy on FGC Generic, and no influence seen on components (Louvain showed that critical limit was below 120 Gy).
- 3 crashes not explained but manual-recovering using hardware Power Cycle implemented feature each time.
  - A Run log has been created. it can give some information about these events. To be interpreted.