Equipment status for temperature regulation on top of current leads

Tests in CNGS

Equipment status

Test periode	Regulator 1	Regulator 2	Regulator 3	SSR 1	SSR 2
6 -> 20 oct 08	Stopped the 11th → HS N: 13.10^9 cm^{-2}	Stopped the 15th → restart N: 28.10^9 cm^{-2}		Stopped the 11th by Reg 1 N: 13.10^9 cm^{-2}	Stopped the 15th by Reg 2 N: 28.10^9 cm^{-2}
27 may -> 15 june 09		N: 4.10^9 cm^{-2}	N: 4.10^9 cm^{-2}	N: 4.10^9 cm^{-2}	N: 4.10^9 cm^{-2}
27 may -> 30 june 09		N: 47.10^9 cm^{-2}	Stopped the 20th N: 7.10^9 cm^{-2}	Stopped the 20th by Reg 3 N: 7.10^9 cm^{-2}	N: 47.10^9 cm^{-2}
Cumul	N: 13.10^9 cm^{-2} HS	N: 75.10^9 cm^{-2} 1 stop but still working	N: 7.10^9 cm^{-2} 1 stop Still OK ?	N: 20.10^9 cm^{-2} 2 stops by reg1 & reg3 Still OK ?	N: 75.10^9 cm^{-2} 1 stop by reg2 but still working

N: Fluence of 1MeV neutrons equivalent

Tests in CNGS in 2008

- 2 control units were installed in CNGS with 2 controllers and 2SSR (25A and 50A)

- First tests occured from the 6th to 20th oct 2008
  - First unit (with SSR 50A): Operationnel until the 11th oct.
    - Hadrons (E>20MeV) = 12.10^9 cm^{-2}
    - Neutrons (E_{eq} 1MeV) = 13.10^9 cm^{-2}
  - Second unit (with SSR 25A) : Operationnel intil the 15th oct.
    - Hadrons (E>20MeV) = 28.10^9 cm^{-2}
    - Neutrons (E_{eq} 1MeV) = 32.10^9 cm^{-2}

  2 units stayed in zone until the 20th oct.
    - Hadrons (E>20MeV) = 50.10^9 cm^{-2}
    - Neutrons (E_{eq} 1MeV) = 55.10^9 cm^{-2}

Tests in CNGS in 2009

- In oct 08 the display of the 2 regulators did not work.
- In April 09, the 2 units were tested. The 2 SSR worked perfectly well as well as one of the regulator (from unit 2).
- For phase 1, the regulator of the unit 1 has been replaced and the 2 control units are now in CNGS (TSG46) but not directly exposed in front of the tunnel but slightly protected by the wall.
- For phase 2, the 2 units have been slightly moved forward to the galery, the radiation received is almost 10 times higher than before (phase1)
- Phase 1
    - Dose (TGS4.CNGS08:Dose_LS) = 0.18 Gy
    - Neutrons = $4.3.10^{9}$ cm^{-2}
- Phase 2 (until the 30th june)
    - Dose (TGS4.CNGS08:Dose_LS) = 1.1 Gy
    - Neutrons = 47.10^{9} cm^{-2}