EN Engineering Department

Will we still see SEEs?

(a word trick game)

R2E Project Meeting - draft presentation for Chamonix 2012 – 19th January 2012

M. Calviani (EN/STI) for the R2E Mitigation Project

Session 07 – After LS1

- Overview/summary of planned activities for LS1
  - shielding, relocation, 600A patch solutions, QPS, nanoFIP, FGClite
  - Objective as from the R2E review: SEEs should allow for a peak lumi of $2*10^{34}$ $cm^{-2}s^{-1}$ with an integrated lumi of >40 fb^{-1}
- Resolution of issues in P1/5/7 UJs + P8
- Rad-tolerant power converters outlook – RRs
  - Yves input?
- Impact of SCLs for RR equipment (also for HL-LHC?)
- General tunnel equipment – how things should evolved
  - QPS, TE/EPC installation?
- Radiation levels:
  - Luminosity dependent areas are under control
  - Questions marks:
    - Beam-gas source term evolution in the ARC/DS
    - Evolution of losses in IP3/7

Session 07 – After LS1

- 2012 operation:
  - will allow addressing some of these points
  - with increased cumulated lumi we could establish a more complete forecast of
    - radiation levels
    - projected failures after 2014/15 (need constant input from equipment owners via the RadWG!)
- Other question marks:
  - Ion operation?
- Notes:
  - At higher rad levels we might expect failures in some equipment which didn't show anything up to now!
  - Note that chip's sensitivity to SEUs will probably increase with modern technology