

RadWG & CNRAD 2010

RadWG 2010 Objectives

- RadWG -> “Working Group”
 - Your Input/Request
- Preparation for June R2E Workshop and Report
- 2010 CNRAD Equipment Tests with focus on COTS
- Detailed review of Equipment in Critical areas (*e.g.*, H. Jena’s talk last time)
- Possible requirements for short 2010/11 shutdown
- Power Converter Tests (LHC or North-Area)
- 2010 Radiation Tests and Related Issues

Preparation for June R2E Workshop

- Equipment Inventories (it's more than one year)
 - basis for relocation preparations
 - basis for estimates of failure rate estimates
- Failure Rates of 'most sensitive' and 'critical' equipments -> Prediction for 2011 and beyond
- Equipment 'Mitigation Options'
 - *e.g.*, Remote Reset (as used in CNGS)?
 - *e.g.*, Separation of Control Parts (easing relocation)?
 - ...

CNRAD 2010 & LHC Failure Rates

- ‘Sensitivities’ as obtained during ongoing CNRAD tests (CV PLCs, Ethernet Switches, Fire-Detectors, Timing/Remote-Reset, WIC Crate)
- Number of sensitive components in Critical Areas:
 - Equipment Inventory (see [link](#))
 - Your update (please check and send to G. Spiezia)
- Radiation Levels:
 - based on Chamonix 2010 estimate (see [link](#)), to be reviewed until June
- -> Expected Failure Rates (2011/Nominal)
 - see draft table...

Failure Rate Estimate (first draft)

LHC Point	Area(s)	2011 (integrated)	Nominal (integrated)	2010/11 $\times 10^7$	Nominal $\times 10^7$	Equipment			Comments	Failure Rate (year ⁻¹)	
						Type	#	Sensitivity		2011	Nominal
Point 1	UJ14 UJ16	2.5E+07	5.0E+09	2.5	500.0	PLCs:	50	1.00E+07	first guess	125	25000
	RR13 RR17	5.0E+06	1.0E+09	0.5	100.0	...	25	1.00E+07	first guess	12	2500
	UPS14 UPS16	5.0E+06	1.0E+09	0.5	100.0	alignm.	10	1.00E+09	hardness even higher?	0	10
Point 3	UJ33	6.3E+04	1.3E+06	0.0	0.1		50	1.00E+07	first guess	0	6
	UJ/RE32	8.4E+05	1.7E+08	0.1	16.7		50	1.00E+07	first guess	4	836
Point 5	UJ56	2.5E+07	5.0E+09	2.5	500.0		50	1.00E+07	first guess	125	25000
	RR53 RR57	5.0E+06	1.0E+09	0.5	100.0		25	1.00E+07	first guess	12	2500
	UPS54 UPS46	5.0E+06	1.0E+09	0.5	100.0		10	1.00E+09	hardness even higher?	0	10
Point 6	UA63 UA67	2.5E+06	5.0E+07	0.3	5.0		10	1.00E+07	Ducts can be sealed	2	50
Point 7	UJ76	1.0E+08	2.0E+09	10.0	200.0		50	1.00E+07	first guess	500	10000
	RR73 RR77	1.0E+07	2.0E+08	1.0	20.0		25	1.00E+07	first guess	25	500
Point 8	UX85b	1.0E+09	2.0E+09	100.0	200.0		0	1.00E+07	nothing left?	0	0
	US85	2.5E+08	5.0E+08	25.0	50.0		50	1.00E+07	first guess	1250	2500
	UW85	5.0E+07	1.0E+08	5.0	10.0		15	1.00E+07	first guess	75	150
TI2	UJ23	6.9E+06	6.9E+07	0.7	6.9		4	1.00E+07	shielding 2010/11 most likely possible	3	28
TI8	UJ87	6.9E+06	6.9E+07	0.7	6.9		4	1.00E+07	shielding 2010/11 most likely possible	3	28
Average Failure Rate (day ⁻¹)										2011:	11
										Nominal:	346

Some News

- Additional Test Locations for 'big' Equipment (*e.g.*, Power-Converters)
 - Brainstorming session last week (see [slides](#) & [minutes](#))
 - LHC Collimation Area or North-Area in discussion
- a.o.b.,?

Next RadWG Agenda

Date: Tuesday May 18th, 10:30h

- EN/EL Equipment in Critical Areas
(M. Codoceo)
- Update of Failure Rate Table
(M. Brugger)
- Feedback from Equipment Report Approvals
(G. Spiezia)
- Remaining Radiation Test Campaigns 2010
(D. Kramer)
- Calculations vs. Measurements a first 'glance'
(M. Brugger)
- a.o.b.,