Power Supply Trip and Machine Protection

For discussions

SNS/BNL Accelerator Physics Video

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Power supply trip and machine protection

- RTBT quad strength variation of 10% cause density fluctuation on target by 20% -- needs window monitoring
- Corrector trip (one) can cause
  - 95% linac beam missing foil – 1.4 MW on a 200 kW dump
  - 1-2 % beam hitting ring collimator – 30 kW for a 2 kW tolerance
  - 13% hitting RTBT collimator – 200 kW for a 2 kW tolerance
- Presently dipole and quads on MPS (Machine Protection System)
  - How fast can PS's signal the MPS system for a shut-down?
- Should correctors be monitored through diagnostics?
  - Trust loss monitors to 100%?
  - Use MPS system instead? Cost implication? (60k?)
- What about local interrupt (PSC/PSI)?
- Should EPICS Alarm Handler system be used instead?
  - Speed of 300 ms?
  - Accidentally shutting down applications?