

Considerations about radiation limits of coil insulation

With «conventional» radiation resistant systems operational limit ~30 MGy

With epoxy/cyanate-ester blends this limit can be increased.

ITER specification for TF coils is 100 MGy, which has been met with different blends.

High cyanate ester content blends (40%) show good properties even after 250 MGy.

An excellent summary of the work done for ITER can be found in:

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Radiation Resistant Insulation Systems for the ITER Toroidal Field Coils

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The electrical properties as a function of radiation doses were not challenged

We intend to propose to perform a study starting from these data, including electrical characterization, and possibly increasing the radiation exposure beyond 250 Mgy, within a Special Technology Program.