

Instrumentation selection for cryogenic HTS coil gamma irradiation at doses up to 10MGy

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Tokamak Energy has completed a project to build our understanding of the performance of HTS coils under gamma radiation up to doses of 10MGy. A cryogenic HTS test rig was built to enable this, and testing was carried out at the Gamma Irradiation Facility at Sandia National Laboratories.

One of the key challenges of this unique experiment is instrumentation selection. Instrumentation on the HTS coils under test are exposed to gamma radiation up to doses of 10MGy while at cryogenic temperatures. The selection of sensors and design of instrumentation hardware in the cryostat was critical to deliver accurate and reliable experimental results.

This poster will focus on the selection and performance of key components, including temperature and magnetic field sensors, for operation in a cryogenic and gamma radiation environment.

Submitters Country

United Kingdom

Authors: Mr BROWN, James (Tokamak Energy); BRISTOW, Matt (Tokamak Energy); Mr ROWLAND, Max (Tokamak Energy); BATEMAN, Rod; Dr GHANNADZADEH, Saman (Tokamak Energy); BAYLISS, Vicky (Tokamak Energy); Dr WILSON, chris (Tokamak Energy)

Presenter: BAYLISS, Vicky (Tokamak Energy)

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