



Co-60 Gamma Irradiation Facility

CNL's GC60 Gamma Irradiation Facility (GC60) produces a collimated beam of gamma radiation of varying strengths. This facility hosts a Cobalt-60 (Co-60) gamma beam irradiator and a Model X80 X-Ray Beam Irradiator with a wide energy range of X-rays. This facility is primarily used internally at CNL for calibrating nuclear radiation instrumentation and irradiating personnel dosimetry badges for quality assurance and type testing.

A unique feature of the GC60 allows instruments, material samples and specimens of any type of material in need of testing to be irradiated with accurate doses. The beam calibrator consists of four pneumatically operated shielded sources, a beam collimator to define and limit the extent of the useful beam, a linear positioning track, an interlock system and a control panel. With the two irradiators in the GC60, several different irradiation energies (gamma and X-ray) are available; doses can be further controlled using a remotely operated, computer-controlled positioning system.

The gamma irradiator currently operates with three Cesium-137 sources for a total activity of 9×10^{11} Bq and one Co-60 source with an activity of 2×10^{11} Bq. The X-ray irradiator provides a wide range of X-ray energies.

The GC60 is operated by members of the Radiological Protection Research and Instrumentation Branch at CNL's Chalk River Laboratories. In addition to the hands-on operation of the GC60, branch professionals have extensive knowledge of dosimetry, and are able to leverage existing expertise in this field to enhance any project.

CNL offers numerous complementary facilities to further any proposed partnership, including the Health Physics Neutron Generator and the Gamma Beam 150-C Irradiator.

