

Decade Radiation Test Facility

The Defense Threat Reduction Agency has installed a new simulator, the Decade-Quad, in the Decade Radiation Test Facility (DRTF). The DRTF is nation's premier radiation test facility for assessing the survivability and operability of critical military systems against an intense flash of x-rays from a nuclear weapon in space. The facility is the most advanced x-ray, or ionizing, radiation simulation technology available to test space and missile systems and their components. It improves the Department of Defense's ability to maintain confidence in its military systems.

The approximately \$100 million facility is a collection of systems that provide multiple environments which simulate some of the effects generated by nuclear weapons in space. The Decade-Quad, the facility's largest simulator, can test entire satellites or operating electronic ensembles such as satellite surveillance, communications and missile navigation subsystems. Missile and space system developers will also be able to evaluate radiation effects on components or individual parts using other DRTF simulators.

Test items are exposed to a short pulse of intense x-ray radiation during each simulator shot. The simulator stores large amounts of energy over a few minutes and then quickly releases the energy to expose test objects to short x-ray pulses for several billionths of a second. Test data is available about 20 minutes after each shot.

The DRTF provides a high intensity dual mode (hot x-rays now, cold x-rays next year) radiation simulator and a low intensity, high fidelity radiation simulator for component and small circuit testing. The test facility, designed for the customer, has a low-noise data acquisition system, and the ability to test classified systems in a secure environment.

The DRTF is located at Arnold Engineering Development Center, Arnold Air Force Base, Tenn. An environmental assessment of the DRTF has determined there will be no significant environmental effects.

DTRA deters the use of weapons of mass destruction, reduces the present threat to the United States and its friends, and prepares for future threats. This Department of Defense combat support agency is located in the ashington, D.C., area and operates field offices worldwide.

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