

STEAC-PC-SO  
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## FACTSHEET

**SUBJECT:** Testing of Depleted Uranium (DU) by Aberdeen Test Center (ATC)

**FACTS:** Depleted uranium (DU) testing has been conducted at Aberdeen Proving Ground since the late 1950's. Until the 1970's most testing was conducted under small research and development programs. At that time ballistic testing escalated which included long distance shooting, as well as armor penetration and lot acceptance. Shooting was conducted primarily in the open-air range. In 1979 the first of three target enclosures was built to contain aerosols and particles generated during armor penetration shots. The latest version is our "Superbox", built in 1990 to perform live-fire testing of a fully uploaded combat vehicle. Today target accuracy (1,000-4,000 meters) shooting is still conducted on the open range. Impacts are now mostly confined to huge "catchboxes" filled with sand. These catchers minimize the spread of DU on the open range and make retrieval of spent projectiles a lot easier. About 150,000 kilograms rests on our range, of which more than half is contained in the catchboxes.

1. Authorized to test DU by the U.S. Nuclear Regulatory Commission under license number SUB-834, ATC has tested DU in armor, and in penetrators from small arms up to the 120-mm large caliber ammunition. Typical testing includes:

- a. Live fire armor vulnerability.
- b. Armor and projectile testing for MIL-SPEC and R&D.
- c. Environmental simulation which includes rough handling, vibration and weathering.
- d. Direct fire for long range projectile accuracy and flight characteristics, as well as weapon performance and hardware testing.
- e. Tank gunnery for weapon systems accuracy to develop hit probability estimates and fleet zeros, plus outdoor evasive target testing of vehicle fire control systems.

2. Personnel radiation exposures at ATC are historically low due to good work practices, hazard controls, and also because DU is considered a low radiological hazard. DU workers generally receive between 2 and 4 millirem of radiation each year. This compares favorably with occupational exposure standards, which allow up to 5000 millirem per year. The following are major elements of our radiation protection program:

- a. Pre-placement and annual refresher worker training and education programs.

- b. Worker participation in hazard analysis review.
- c. Protective equipment such as anti-contamination clothing and respirators.
- d. Radiation exposure monitoring which includes direct measurements and personal breathing zone air sampling.
- e. Worker medical surveillance program supported by bioassays for potential internal uptakes of DU.
- f. Oversight is provided by the local Radiation Safety Committee and is regularly audited by TECOM, AMC, MEDCOM, and the NRC.

At ATC the environment is regularly monitored for DU in established pathways to people, plants and animals. Our analysis distinguishes between DU and the naturally occurring forms of uranium in the environment and we could detect and quantify any DU moving within and around our ranges. We collect samples of air/soil, stream sediments, surface water from streams ponds, and the Chesapeake Bay, ground water, vegetation, air, and game animals such as deer, rabbits, fish, and crabs.

TECOM and its Test Centers have invested over \$4M in special DU environmental studies. This is above and beyond costs for facility upgrades plus ongoing monitoring and studies. Our findings at ATC show that DU transport is limited to small/local areas within the test ranges, and DU movement to ground water is hindered by various soil mechanisms. These mechanisms can include slow ground water flow velocity, layers of clay, microbial fixation, and detritus filtration. To date, no adverse radiation or toxicological effects have been observed in animals or plants at ATC. Models have also shown that no measurable adverse health effects to humans or the ecosystems are predicted even in the future. Ongoing environmental data is sufficient to detect DU movement within and off the range.

My staff has been working with Mrs. Dee Dodson Morris of Dr. Rostker's office to arrange a time when they can witness a test shot at our Superbox. We are tentatively planning the test shot for the week of 25 January - probably the 26th or 27th.

RELEASED BY:  
James W. Fasig  
Technical Director, ATC

ACTION OFFICER:  
Larry Davis  
Radiation Protection Officer  
(401-278-9618/DSN 298-9618)