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Depleted Uranium Fact Sheet

International Action Organization

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1) Depleted Uranium is a radioactive heavy metal with a half life of 4.5 billion years. It is nuclear waste, created when natural uranium is enriched to make nuclear weapons (at a ratio of 7 to 1). The US government uses DU as penetrators. In bullets, missiles and bombs, it self sharpens as it penetrates the target and burns upon impact (pyrophoric). (<http://www.umrc.net/whatIsDU.asp> UMRC, 2001)

2) The Uranium Medical Research Centre (UMRC) warns that the name is misleading as it is "depleted" only in the isotopes U234 and U235. These isotopes constitute less than 1% of the total uranium which means both "depleted" uranium and "natural" Uranium are over 99% composed of Uranium 238. In addition to this, DU contains U236, highly radioactive, man-made particles resulting from the enrichment process. (<http://www.umrc.net/duBasics.asp> UMRC, 1999)

3) As it decays, DU gives off Alpha, Beta and Gamma particles. It is generally accepted that Alpha and Beta are not an external threat and can be blocked by a sheet of paper. However, because of their pyrophoric nature, as DU munitions strike, they transform into tiny ceramic aerosol particles. This DU dust can travel great distances, and is easily resuspended in the air becoming inhaled and ingested. (<http://www.umrc.net/duBasics.asp> UMRC, 1999)

4) Once inside the body, there is no way to prevent the radioactive properties of DU from creating hazardous ions or causing extensive damage to bonds that hold molecules together, proteins, enzymes, cells, chromosomes, DNA and RNA. (<http://www.umrc.net/duBasics.asp> UMRC, 1999)

5) While most Depleted Uranium is excreted from the body, the small amounts that remain are a constant source of low-level radiation that damage cell structure. When this kind of damage takes place in reproductive organs it leads to genetic mutations, which are passed on from generation to

generation. (<http://www.umrc.net/duBasics.asp> UMRC, 1999)

6) Cells face even more damage due to the Second Event Theory of Radiation. After cells have been hit one time with radiation, they enter a repair stage and for 8-10 hours are more susceptible to damage from another dose. As DU stays in the body indefinitely it constantly radiates cells in this delicate stage of repair. (<http://www.llrc.org/du/duframes.htm> Busby, 2000)

7) Pentagon officials estimate that 1,100*-2,200 tons of depleted uranium were dropped by U.S.-led coalition forces during their attack on Iraq in March and April 2003. This contrasts with about 375 tons used in the 1991 Gulf War, 11 tons fired during the 1999 war against Serbia over Kosovo and a much smaller quantities used against rebel Serb positions in Bosnia in 1995.

(<http://www.commondreams.org/headlines03/0615-01.htm> Borst, 2003)

*1,100 metric tons of DU = 1,100,000,000 grams of DU = 7,931,000,000 rem/yr, contaminating heavily populated cities like Baghdad and Basra (personal communication). The US sets a limit of 5rem/year for external exposure to DU and 50rem/year for deep dose (inhalation) exposure.

8) In 1993, Congress passed PL-103-160 Section 271, ordering the DoD (Department of Defense) to study the effects of inhaled and ingested DU (<http://thomas.loc.gov/cgi-bin/bdquery/z?d103:HR02401:TOM:bss/d103query.html> Thomas Legislative Information on the Internet). In violation of the law, the DoD has not funded a single study, instead focusing on embedded DU using non-battlefield scenarios.

9) Cleanup crews at Lowry Air Force Base discovered two DU shells in 1999. The shells and 1 acre of soil were collected and are now residing at a low level radiation storage facility, so are the drums associated with that removal. (<http://www.cdphe.state.co.us/release/1999/031899.html> CDPHE, 1999, 30)

10) Are the cleanup crews at Lowry being overly cautious? Consider the number of alpha particles emitted by a single spherical pellet of Uranium Oxide (UO₂) 0.0001 inch or 2.5 microns in diameter (equivalent to 1/40th the width of a human hair) and the dose rate it produces (http://www.ccnr.org/du_hague.html Bertell, 1999). [Uranium Oxide is created when the DU penetrator burns into ceramic aerosol particles. Anything under 10 microns can be inhaled]

The 2.5 micron Depleted Uranium Oxide pellet contains 210 billion atoms (2.1×10^{11}) of U238. Each year, the pellet will emit an

average 32.3 alpha particles. It also contains U234, 235, 236 which together yield an additional 5.3 alpha particles per year. Thus a single pellet of Depleted UO₂ will produce a total of 37.6 alpha particles per year.

The 37.6 alpha particles will deliver a radiation dose of 17 rads/year. With an RBE (Relative Biological Effectiveness) factor of 10, the dose rate is 170 rem/year for the surrounding body tissue. Remember, the limit for deep dose DU is 50 rem/year (personal communication).

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