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Uranium and the War

The effects of depleted uranium weapons in Iraq

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Global Research, March 23, 2007
uruknet.info 21 March 2007

Theme: Crimes against Humanity, Militarization and WMD
In-depth Report: Depleted Uranium, IRAQ REPORT

In five billion years our sun will explode into a white dwarf and envelope the earth, according to NASA projections.

The half-life of uranium 238 is 4.5 billion years.

This means that by the time the Earth ceases to be a planet, only a little more than half of the depleted uranium (DU) that the United States Army is firing into Iraq and other countries around the world will be gone. The rest of the radioactive material will still be poisoning the Iraqi people.

The U.S. Army revealed in March 2003 that it dropped between 320 and 390 tons of DU during the Gulf War—the first time the material was ever used in combat—and it is estimated that more still has been dropped during the current invasion, though there have been no official counts as yet.

Depleted uranium munitions are extremely dense, toxic, and mildly radioactive. And despite mounting evidence of DU's negative health affects for combatants and civilians alike, their use is increasing.

Naturally occurring uranium has three forms: uranium 235, 234, and 238. More than 99 percent of earth's uranium is 238. Uranium 238 is much less radioactive than uranium 235, which is why it takes so long to deteriorate.

Nuclear weapons and nuclear power plants require highly radioactive uranium, so the uranium 238 is removed from the naturally occurring uranium by a process known as enrichment. Depleted uranium is the by-product of the uranium enrichment process.

Since so much of the natural uranium is 238—which is nearly useless for nuclear weapons manufacturing and use in power plants—uranium enrichment factories are left with large amounts of uranium 238, or DU. According to an estimate by the Kansas-based group Nukewatch, the United States has over a billion pounds of DU in its stockpile. This product is twice as dense as lead, and more toxic than it. DU is used to make numerous weapons systems, from shells to bullets to armor for tanks. DU munitions are commonly called Penetrators, a testament to the material's density.

Effects in Combat

Depleted uranium was a major topic of discussion during a Feb. 24 forum at UC Santa Cruz

with speakers from the Iraq Veterans Against War (IVAW). The panel consisted of five members of the IVAW chapter in Olympia, Washington who visited Santa Cruz as part of a speaking tour of the west coast.

Joe Hatcher, a member of IVAW who served in Iraq with the army's 4th Calvary Brigade from February 2004 to March 2005, described the on-the-ground reality of DU use in Iraq.

"During our invasion of Basra, I got a call from Bravo team, who was on the other side of the town," Hatcher recalled. "They said, 'Stop firing, the DU bullets are coming through at us.' Our bullets were going through the whole city and coming out the other side. Keep in mind Basra is a city of about two and a half million people." (more than three times the population of San Francisco.)

Hatcher continued, "If I can shoot a bullet into a mud house and have it go for possibly miles, then it's no wonder there are so many civilian deaths."

A Johns Hopkins Study published in October 2006 placed the Iraqi death total during the American occupation at 655,000, roughly one for every 40 people in Iraq—due in part to the use of DU munitions.

The Royal Society, Britain's preeminent scientific organization, conducted what many consider to be the definitive independent study of wartime DU. The study found that the radioactive dust that a DU bullet creates upon impact can travel more than 26 miles. It also noted that when a bullet made of DU hits a target, it explodes at heat levels upwards of 6000 degrees Celsius.

Apart from the physical destruction DU bullets cause, their impact on the health of both soldiers and citizens alike is cause for concern.

Tom Cassidy, an IVAW member who served in Iraq from 2003 to 2005 in the 1st Cavalry Division, also spoke of the dangers of nuclear radiation from the DU bullets.

"After the first gulf war, the level of radiation was 300 times what is considered normal," Cassidy said. "In this invasion we used even more DU bullets. The effects there are horrible."

Joe Hatcher explained that being around nuclear radioactive material in Iraq was commonly known to be part of the job.

"Before I went home on my last tour of duty, I was assigned to clean the trucks that we had used, because as they were they wouldn't pass environmental standards to come into Germany, because of the radiation they were around," Hatcher said. "I tell this to folks here in America, and oftentimes they'll freak out, but back there it was just normal, just another assignment."

Kate Flanagan, a UCSC feminist studies major and the event organizer, discussed the importance of raising awareness about the prevalence of DU.

"Depleted uranium is just one factor in the whole military industrial complex, though a particularly dangerous one," Flanagan said. "The only way to stop depleted uranium is to stop the war."

Effects on Health

Hatcher and his fellow members of the IVAW believe that their experiences in the Gulf War were the beginnings of what will be a long-term health problem in the region.

Dennis Kyne served in the U.S. Army 18th Airborne Division for 15 years as a non-commissioned officer and a drill sergeant during Desert Storm. Kyne has devoted much of his time since his service in the first Gulf War to investigating the use of DU and its effects on soldiers and civilians. One of Kyne's most urgent complaints is the testing that was done on U.S. soldiers returning from Kuwait.

"After I returned from Desert Storm, I was put into one of the slew of study groups [the army] stuffed vets into—mine was for ionizing radiation. In 1995 I was compensated for undiagnosed illnesses," Kyne said.

According to a congressional hearing of the Veteran's Disability Benefits Commission, over half a million veterans suffer from undiagnosed illnesses, which may or may not be due to the radiation. Radiation sickness is considered by some researchers to be a leading cause of Gulf War syndrome—an illness involving a weakening of the immune system that many veterans of the Gulf War have reported.

Kyne has transformed his personal experiences into a public agenda. He has written two books on DU and its effects, a number of articles, including one article entitled, "Whatever Happened to the Test Tube Paradigm," first published in the San Francisco Bayview in Feb. 2005, which was one of the first to bring light to DU issues. He has been interviewed in a number of documentaries, TV shows, and radio shows, including Nightline and NPR. He recently ran for city council in his hometown of San Jose on a peace platform.

"The scientists call it cell disruption, and they don't know why it's happening to veterans, but it's really radiation sickness," Kyne said. "And it's because the DU is all over."

The Royal Society investigation into DU wartime use found that there was a possibility that soldiers who had been in close proximity with DU munitions would have twice the risk of death from lung cancer as those who were not. Although the World Health Organization (WHO) has not spoken out against the use of DU munitions, their website states that, "the behavior of DU in the body is identical to that of natural uranium."

Roberto Gwiazda, a researcher in the environmental toxicology department at UCSC, was the lead researcher in a project examining the level of uranium in veterans of the Gulf War, including vets who had sustained shrapnel wounds involving radioactive material. These were all friendly fire incidents, as the United States is the only country in the world that uses DU shells.

"Of those with radioactive shrapnel wounds, all had significant levels of uranium in their urine seven to nine years after the explosion," Gwiazda said. "Of those who only inhaled the incendiary uranium, a statistically significant number also had high uranium levels."

A study conducted by the Pentagon in 2002 predicted that, "every future battlefield will be contaminated" with DU. The fact that radioactive dust from a bullet explosion can spread nearly 30 miles means that the radius of disruption surrounding a battle sight can be vast. Further, the WHO report on DU states, "Over the days and years following [DU contamination], the contamination normally becomes dispersed into the wider natural

environment by wind and rain. People living or working in affected areas may inhale contaminated dusts or consume contaminated food and drinking water."

Army training manuals inform American military personnel that DU contamination renders food and water unsafe for consumption.

While soldiers do not have to continue living in the contaminated areas for the rest of their lives, people living in Iraq are not so lucky. Tom Engleart, another IVAW speaker, recalled the high rate of birth complications since the US occupation, and DU use, began.

"I don't call the birth defects there defects," Englehart said. "There were defects after the first Gulf War, a lot of them. But now there's a massive upswing in miscarriages and stillborns. They're just these pulpy masses with no form."

Up-to-date health information from Iraq is difficult to come by. But a November report from Al-jazeera concluded that, "[The] cancer rate in Iraq has increased tenfold, and the number of birth defects has multiplied fivefold times since the 1991 war. The increase is believed to be caused by depleted uranium."

The Future?

Alliant Techsystems (ATK) is the country's largest producer of depleted uranium weaponry. While most arms makers use DU to armor tanks, the DU munitions that ATK produces are more controversial. ATK has received contracts from the U.S. Armed Forces totaling $52,000,000 in the past month alone, according to their website. Bryce Hallowell explained ATK's reasoning behind producing DU weapons.

"We want to make the best weapons possible for the U.S. Army," Hallowell said. "We do not want a fair fight. We want the army to be able to engage the enemy at long distances and take them out."

Dave Hansen, a member of an activist group called Alliant Action, helps organize weekly vigils at ATK's headquarters to protest the company's DU production. Although the vigils have taken place for over a decade, according to Hansen there are as yet no signs of decreasing production from the company.

"There have been weekly vigils for ten years now, as well as intermittent civil disobedience," Hansen said. "That's a long time, with not a whole lot to show. But the movement is growing, so that's good news."

But Hansen's movement is just to stop the production of radioactive weapons. Even if Alliant Action's campaign to end DU munitions production were successful, hundreds of tons of radioactive material would still be scattered across the globe.

This reality was not a landscape of hope for Kate Flanagan. As she put it, "As far as DU is concerned, there's not much hope."

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