

# DEPLETED URANIUM (DU)



- 1. Years of scientific study demonstrate that depleted uranium (DU) poses minimal radiological risk when disposed of properly. All risk to the environment and to the general public can be safely managed with proper disposal and long-term monitoring by EnergySolutions' professional staff and state and federal regulators.**

Depleted uranium is uranium that has had much of its radioactivity removed and has approximately half the radioactivity of natural uranium. It therefore poses minimal radiological risk to workers that manage the packaging, transportation and disposal of this byproduct. DU is classified as low-level Class A waste by the U.S. Nuclear Regulatory Commission (the very lowest radioactivity classification of all nuclear waste). The Clive Facility is permitted to accept low-level Class A waste and has safely and responsibly done so for 28 years.

- 2. DU disposal at Clive is the most responsible alternative to protect the environment and to assure public safety.**

- a. Ideal Location, Geology and Proven Performance.** The Clive site lies on top of one of the most stable geological basins in the United States. Layers of naturally occurring impermeable clay, which are necessary to safely enclose the waste, are in natural abundance. The area surrounding the Clive Facility is also exceptionally arid with low precipitation and high evaporation. The groundwater that does exist is twice as salty as ocean water, and therefore cannot be used as a source of drinking water or irrigation. EnergySolutions' Clive Facility is a unique low-level waste disposal site – a remote location, arid climate, appropriate soil composition and stable

geology. Equally important, EnergySolutions is the only U.S. company with 28 years of demonstrated safety, technology investment and proven industry leadership. The conditions at the site, such as soil and groundwater salinity, ensure that human habitation will not occur, even in the distant in the future. Simply put, the Clive Facility provides the most environmentally responsible disposal option for DU in America.

- b. Strict regulation and State-of-the-Art Monitoring System.** The Clive Facility is strictly regulated and monitored by the State of Utah and the Nuclear Regulatory Commission (NRC). In addition, the Department of Energy (DOE) regularly conducts audits and inspections of the facility to ensure complete compliance. At the facility, best practices and processes are utilized to protect the environment. EnergySolutions employs an extensive state-of-the-art technology, including a monitoring network of over one hundred air, soil and water sensors.
- c. Scientific Study.** The Clive Facility has been evaluated multiple times by independent scientific studies. The recent Technical Performance Assessment, conducted over a period of two years, concluded that the Clive Facility is suitable for disposal of DU. Furthermore, independent third party experts reviewed this study and concluded the methodology used was valid. These studies, and the review of the Technical Performance Assessment, have also been reviewed by the appropriate regulatory bodies at the State of Utah. EnergySolutions continues to cooperate with the review process and is committed to address every unresolved issue in the Safety Evaluation Report.

# FAQ

## ABOUT DU

### **Q: What is Depleted Uranium?**

Depleted uranium (DU) is a byproduct of the process used to make enriched uranium (EU). Natural uranium is mined, concentrated, and separated into EU, which contains high concentrations of the various radionuclides required for nuclear reactors. DU is the byproduct that remains. The removal of radioactivity leaves DU with less than half the radiation of natural uranium. DU poses minimal radiological risk to workers who manage the byproduct during packaging, transportation and disposal.

Detailed background information on DU is available at the U.S. Nuclear Regulatory Commission website: [www.nrc.com](http://www.nrc.com).

### **Q: How serious are the environmental and public safety threats posed by the present storage of DU?**

Presently there is over 750,000 tons of DU that have been stockpiled over the past 70 years. Typically, they are stored above ground at present and former uranium enrichment sites, primarily located in the east and south.

Many of these sites are in close proximity to populated areas; and some are along riverbanks or above water tables that serve large populations.

The environmental risks and public safety implications of the present storage of DU are significant, and must be addressed.

Storing the waste properly at the Clive Facility in sealed, protected and well-monitored cells is clearly the most environmentally responsible option for dealing with what has become a very significant public threat.

### **Q: Is it true that DU increases in radioactivity over time?**

DU will remain as low-level Class A waste for 51,400 years and will remain low-level waste - even at its peak level of activity 2.1 million years from now.

The radioactivity of the cell where the DU will be disposed will remain Class "A" low-level waste at all times, even into thousands of millennia. The radioactivity of other waste in the cell will decrease over time as the radioactivity of DU increases.

### **Q: What is the role of Federal Government in responsibility for DU?**

In return for the State of Utah agreeing to allow DU at the Clive Facility, the Federal Government will take ownership and financial responsibility for the long-term management of all waste in the cell where DU will be disposed.

Before the next ice age, when Lake Bonneville floods and inundates the entire Salt Lake Valley under several hundred feet of water, the Federal Government will have the primary responsibility to relocate the DU in consultation with state and local officials. The engineering of the cell at the Clive Facility is designed to allow for the relocation of DU.



### **Q: When was DU determined to be low-level Class A nuclear waste?**

The NRC released SECY 08-0147, in 2008, regarding DU and stated: "Depleted Uranium does not contain the radionuclides listed in the specified tables, and therefore under a plain reading of the regulation, DU is Class A waste."

### **Q: What has EnergySolutions done to engage public comment, especially from local residents?**

EnergySolutions has been an active member of the community in the State of Utah and Tooele County. The company meets regularly with elected and community leaders as well as interested citizens. The company conducts all its businesses in an open and transparent manner.

In April, the company sent out 10,000 flyers to Tooele County residents inviting them to attend an open house at the company's Stansbury office. At this open house, EnergySolutions executives and technical staff were available to answer any questions.

The company plans to continue a public engagement campaign and maintains an ongoing regular site tour schedule. To date, over 10,000 people have toured the site. *Those interested in scheduling a tour of the Clive Facility should contact our tour coordinator Jill Wadsworth at (801) 649-2000 or email at [jxwadsworth@energysolutions.com](mailto:jxwadsworth@energysolutions.com). All are welcome.*