

NATIONAL ENRICHMENT FACILITY



"I feel they are taking the right steps to protect their employees, the community, and our environment."

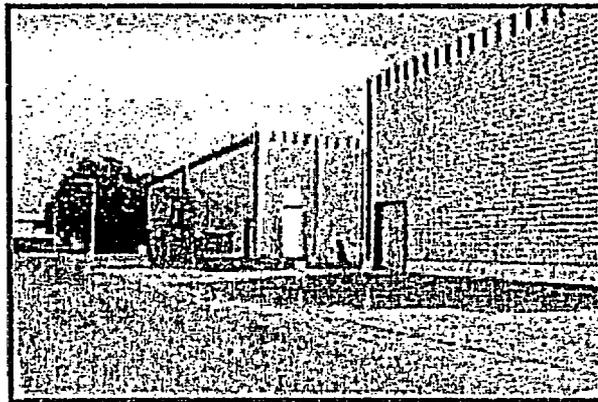
- Steven Stevenson, EMS Director, Eunice Fire & Rescue

[View Spanish](#)

- == HOME
- == ABOUT NEF
- == NEWS / MEDIA
- == EDUCATIONAL RESOURCES
- == BRIEFING MATERIAL
- == NEF SUPPORTERS
- == CONTACT

National Enrichment Facility *(view facility drawings)*

LES has chosen a site in Lea County, New Mexico 5 miles east of Eunice, to build a gas centrifuge uranium enrichment facility. This facility will enable the United States to have a domestic source of enriched uranium for the country's commercial nuclear power plants. LES is a partnership of major nuclear energy companies. Partners include Urenco Ltd., Westinghouse Electric Company, LLC, and U.S. energy companies Duke Power, Entergy and Exelon.



SPS Uranium enrichment facility - Almelo, Netherlands

The new National Enrichment Facility (NEF) will use the world's most advanced, energy-efficient and cost effective uranium enrichment technology. Developed by Urenco Ltd., the technology has been in use for over 30 years. It will be the only facility of its kind in North America.

Established in 1971, Urenco Ltd. is a consortium of British Nuclear Fuels, Ltd., the Dutch government and several German nuclear utilities. Urenco Ltd. operates three enrichment facilities -- in England, the Netherlands and Germany -- and provides 15 percent of the worldwide market in enriched uranium. Westinghouse Electric Company, LLC, a subsidiary of British Nuclear Fuels, Ltd., is a world leader in commercial nuclear reactor technology, including power plant design, nuclear fuel fabrication and related services. Close to 50 percent of the world's nuclear power plants are based on the 117-year-old company's technology.

Uranium that is slightly enriched, termed "low enriched uranium" (LEU), is essential for fueling commercial nuclear power plants. Nuclear energy supplies approximately 20 percent of U.S. electricity and is the second greatest source of the nation's electricity after coal. Because it is greenhouse gas emission-free, nuclear power is often referred to as the most eco-efficient of energies.

NEF will provide a sustainable domestic supply of LEU, thereby substantially reducing U.S. reliance on the global nuclear fuel marketplace and encouraging competition within the U.S. market. USEC is the only other company currently producing enriched

Template = SECY-027

DOCKETED
USNRC

2005 MAR -3 PH 3: 49

OFFICE OF THE SECRETARY
REGULATORY SERVICES AND
ADJUDICATIONS STAFF



U.S. NUCLEAR REGULATORY COMMISSION

In the Matter of Louisiana Energy Service C.P.

Docket No. 70-3103-HL Official Exhibit No. Staff 26

OFFERED by: Applicant _____ Intervenor _____

NRC ST. _____

IDENTIFIED on Photos Panel Nevin

Action Taken: ADMITTED REJECTED WITHDRAWN

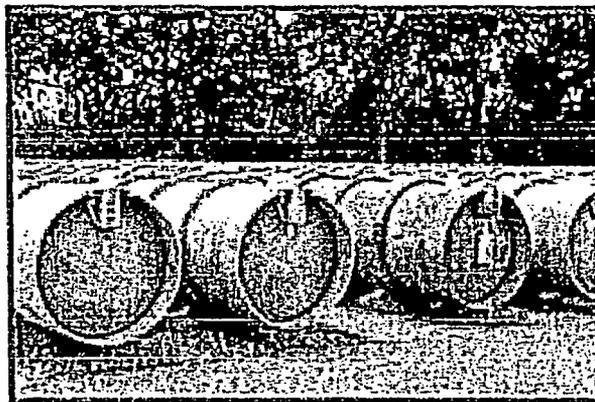
Reporter/Clerk Bethany Egan

uranium in the U.S.

In 2001, the U.S produced only 12 percent of its needed supply of enriched uranium, behind Russia supplying 55 percent and Urenco supplying 16 percent of the U.S. demand. Full capacity operation of the NEF is expected to annually produce 3 million separative work units (SWUs) of uranium, which is approximately one-fourth of current U.S. enrichment services demand.

NEF will produce LEU using the Urenco-developed gas centrifuge technology, proven to be more cost effective and energy efficient than gaseous diffusion. The enrichment process involves the concentration of U-235, one of the isotopes in natural uranium. U-235, only 0.7 percent of the weight of natural uranium, is the needed isotope because it is the one that fissions (splits) inside the core of nuclear power reactors and releases energy in the process. The concentration of U-235 is increased slightly or "low-enriched" from 0.7 percent to 3 to 5 percent during the centrifuge process.

The NEF will house thousands of centrifuges that spin uranium hexafluoride (UF₆) gas at high enough speeds to separate the fissile U-235 from the heavier U-238 isotope. By contrast, gaseous diffusion is based on the separation effect arising from molecular diffusion, i.e. the flow of gas through small holes to separate the isotopes. The NEF centrifuge-enriched uranium, with greater concentrations of U-235, is then ready to be converted into fuel.



Uranium byproduct cylinders (UBCs) - Almelo, Netherlands

The byproduct of the enrichment process is depleted uranium, containing about 0.3 percent U-235. LES will store the uranium byproduct in Uranium Byproduct Cylinders (UBCs) at the NEF site, just as Urenco has safely stored UBCs at its European facilities for 30 years.

This storage process will be regulated by the U.S. Nuclear Regulatory Commission (NRC),

which will determine how many UBCs can be stored at the NEF site and the length of storage time. LES will also work with the New Mexico Environment Department to ensure compliance with the highest environmental standards.

LES chose New Mexico as the site for its U.S. plant for several reasons, notably its history as a hub of scientific R&D and strong support from both Lea County leaders and businesspeople and state officials including U.S. Senator Pete Domenici, current chairman of the Senate Energy and Natural Resources Committee. "Nuclear technologies are well understood and appreciated in this area," says Domenici. Lea

County is also geologically suitable to the new enterprise.

LES applied for an operating license from the U.S. Nuclear Regulatory Commission on December 15, 2003. It is estimated that the approval process will take approximately two years. LES's goal is to produce 1 million SWUs at its New Mexico facility by the year 2009, and triple that by 2013.

 *Energy Independence for America*