R. NEVIN STAFF EXHIBIT 4

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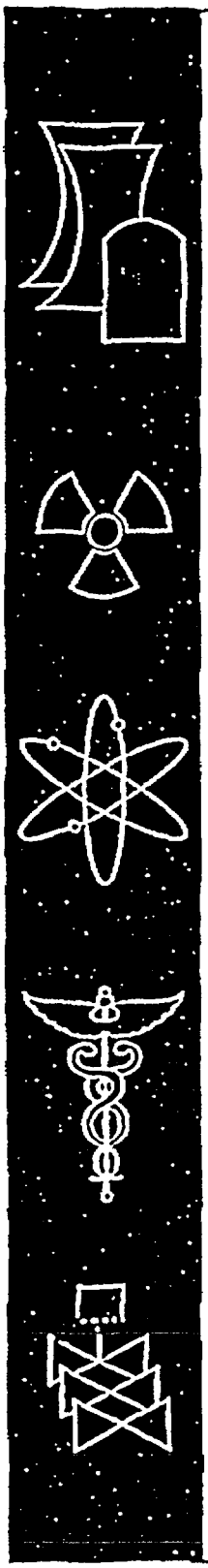

Environmental Impact Statement for the Proposed National Enrichment Facility in Lea County, New Mexico

Draft Report for Comment

U.S. Nuclear Regulatory Commission
Office of Nuclear Material Safety and Safeguards
Washington, DC 20555-0001

in accordance with Title 10, "Energy," of the *U.S. Code of Federal Regulations* (10 CFR) Part 51, which implements the requirements of the *National Environmental Policy Act of 1969* (NEPA), as amended (Public Law 91-190). This Draft EIS assesses the potential environmental impacts of the proposed action.

1.2 The Proposed Action

The LES proposed action considered in this Draft EIS is to construct, operate, and decommission a uranium enrichment facility referred to as NEF at a site near the city of Eunice, in Lea County, New Mexico. The proposed NEF would produce enriched uranium-235 (^{235}U) up to 5 weight percent by the gas centrifuge process. The enriched uranium would be used in commercial nuclear power plants. Uranium enrichment is a step in the nuclear fuel cycle (Figure 1-2) in which natural uranium is converted and fabricated so it can be used as nuclear fuel in commercial nuclear power plants. The proposed NEF would not alter the total amount of enriched uranium used in the U.S. nuclear fuel cycle because the amount of enriched uranium produced at the proposed NEF would only substitute for enriched uranium from other sources.

Uranium ore usually contains approximately 0.72 weight percent ^{235}U, and this percentage is significantly less than the 3 to 5 weight percent ^{235}U enrichment required by nuclear power plants as fuel for electricity generation. Therefore, uranium must be enriched. Enrichment is the process of increasing the percentage of the naturally occurring and fissionable ^{235}U isotope and decreasing the percentage of uranium-238 (^{238}U).

The nominal production capacity of the proposed NEF would be 3 million separative work units (SWUs) per year. A SWU is a measure of enrichment in the uranium enrichment industry, and it represents the level of effort or energy required to raise the concentration of ^{235}U to a specified level.

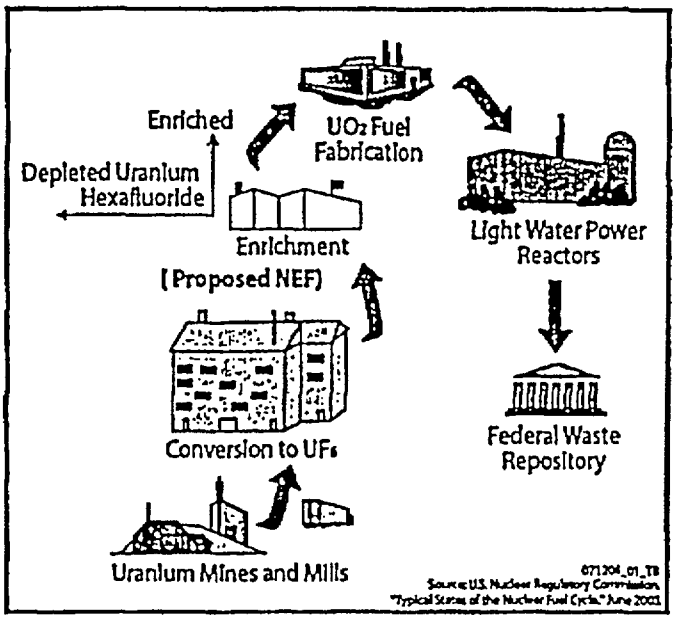

Figure 1-2 Nuclear Fuel Cycle (NRC, 2003c)

The proposed NEF would be licensed in accordance with the provisions of the *Atomic Energy Act*. Specifically, the proposed NEF would require an NRC license under 10 CFR Parts 30, 40, and 70 that would authorize the proposed NEF to possess and use special nuclear material, source material, and byproduct material.

1.3 Purpose and Need for the Proposed Action

The proposed action is intended to satisfy the need for an additional reliable and economical domestic source of enrichment services. The proposed NEF would contribute to the attainment of the national energy security policy objectives. The Administration's energy policy, which was released in May 2001, called the expansion of nuclear energy dependence "a major component of our national energy policy" (NEP, 2001).

Nuclear power plants are currently supplying approximately 20 percent of the Nation's electricity requirements (EIA, 2003a). Of the 11.5 million SWUs that were purchased by U.S. nuclear reactors in 2002, only about 1.7 million SWUs—or 15 percent—were provided by enrichment plants located in the United States (EIA, 2003b). In 2003, the domestic enrichment services provided 14 percent of the total 12 million SWUs purchased (EIA, 2004a).

Over the past 50 years, several uranium enrichment facilities have been used in the United States, including the gaseous diffusion plants near Portsmouth, Ohio (herein referred to as the Portsmouth Gaseous Diffusion Plant), and Paducah, Kentucky (herein referred to as the Paducah Gaseous Diffusion Plant). Both plants are operated by the United States Enrichment Corporation (USEC), only the Paducah Gaseous Diffusion Plant currently remains in operation (USEC, 2003). The end of enriched uranium production at the Portsmouth Gaseous Diffusion Plant in May 2001 has led to reliability risks of U.S. domestic enrichment supply capability. In addition, the Highly Enriched Uranium Agreement deliveries[1] provide for additional U.S. enrichment product. This Agreement is scheduled to expire in 2013. A supply disruption associated with the Paducah Gaseous Diffusion Plant production or the Highly Enriched Uranium Agreement deliveries could impact national energy security because domestic commercial reactors would be fully dependent on foreign sources for enrichment services.

In a 2002 letter to the NRC, the U.S. Department of Energy (DOE) indicated that domestic uranium enrichment had fallen from a capacity greater than domestic demand to a level that was less than half of domestic requirements (DOE, 2002). In this letter, DOE:

- Referenced those interagency discussions led by the National Security Council where there was a clear determination that the United States should maintain a viable and competitive domestic uranium enrichment industry for the foreseeable future.

- Estimated that 80 percent of projected demand for nuclear power in 2020 could be fueled from foreign sources.

- Noted the importance of promoting the development of additional domestic enrichment capacity to maintain a viable and competitive domestic uranium enrichment industry for the foreseeable future.

- Noted that there was sufficient domestic demand to support multiple uranium enrichment facilities and that competition is important to maintain a healthy industry, and encouraged the private sector to invest in new uranium enrichment capacity.

- Indicated its support for the deployment of Urenco gas centrifuge technology in the U.S. market by expressing its support for Urenco to partner with a U.S. company or companies, transferring Urenco's technology to new U.S. commercial uranium enrichment facilities.

Forecasts of installed nuclear-generating capacity suggest a continuing demand for uranium enrichment services both in the United States and abroad. Table 1-1 shows the uranium enrichment requirements in the United States for the next two decades as forecasted by LES (LES, 2004) and the Energy Information

[1] The United States Enrichment Corporation (USEC) implements the 1993 government-to-government agreement between the United States and Russia that calls for Russia to convert 500 metric tons (550 tons) of highly enriched uranium from dismantled nuclear warheads into low-enriched uranium. This is the equivalent of about 20,000 nuclear warheads. USEC purchases the enrichment portion of the blended-down material and sells it to its electric utility customers for fuel in their commercial nuclear power plants. This Agreement is also known as Megatons to Megawatts (USEC, 2004a).

Administration (EIA, 2003c). These two forecasts of uranium enrichment requirements were generally consistent. However, LES projections were adjusted for plutonium recycled in the mixed oxide fuel that would use plutonium oxide and uranium oxide mixture as fuel. DOE is planning to convert approximately 34 metric tons (37.5 tons) of surplus plutonium from nuclear weapons into a nuclear fuel comprised of a mixture of plutonium and uranium oxides, called MOX fuel, for use in selected commercial nuclear power plants (NRC, 2003d). Therefore, the LES projections tended to be slightly lower than the Energy Information Administration forecast. Annual enrichment services requirements in the United States are forecasted to be 11.4 to 14.2 million SWUs in 2025. The two forecasts indicate a need for additional uranium enrichment capability to ensure national energy security.

Table 1-1 Projected Uranium Enrichment Demand in the United States for 2002–2025 in Million SWUs

Year	LES Projections[a]	EIA Projections[b]
2002	11.5	11.5 (actual)[c]
2005	11.6	14.6
2010	11.8	12.9
2015	11.4	15.4
2020	11.4	13.5
2025	Not Provided	14.2

EIA - Energy Information Agency.
SWU - Separative Work Unit.
[a] LES, 2004.
[b] EIA, 2003c.
[c] EIA, 2003b.

The domestic enrichment services would be used in the production of nuclear fuel for commercial nuclear power reactors. By 2020, the United States would need about 393 gigawatts or 393,000 megawatts of new generating capacity (DOE, 2003). Installed nuclear-generating capacity in the United States is projected to increase from approximately 98 gigawatts (98,000 megawatts) in 2001 to about 103 gigawatts (103,000 megawatts) in 2025. This increase includes the uprating of existing plants equivalent to 3.9 gigawatts (3,900 megawatts) of new capacity (EIA, 2004b). This projection, including uprates, would increase U.S. nuclear capacity by more than 5 gigawatts (5,000 megawatts), the equivalent of adding about five large nuclear power reactors. As of March 2004, the NRC has granted 92 uprates and is reviewing 8 uprate applications (NRC, 2004b). In addition, domestic nuclear facilities reported a record high median 3-year design electrical rating capacity factor of 89.66 percent for the period 2001–2003 as compared to 70.78 percent for the period 1989–1991 (Blake, 2004).

USEC provides approximately 56 percent of the U.S. enrichment market needs (USEC, 2004c) with the remaining 44 percent supplied by foreign sources. These enrichment supplies encompass the enrichment products from its enrichment operation at the energy-intensive Paducah Gaseous Diffusion Plant (USEC, 2004a; NRC, 2004a) and the Highly Enriched Uranium Agreement deliveries from Russia, which expires in 2013 (USEC, 2002; USEC, 2004b). The current trend for domestic enrichment services is to develop more efficient, modern, and less costly means to operate enrichment facilities. The gas centrifuge technology for uranium enrichment is known to be more efficient and require less energy to operate than the gaseous diffusion technology currently in use in the United States (NRC, 2004a). On January 12, 2004, USEC announced plans to build and operate a uranium enrichment plant (known as the American Centrifuge Plant) in Piketon, Ohio. This plant

How Much Is a Megawatt?

One megawatt roughly provides enough electricity for the demand of 400–900 homes. The actual number is based on the season, time of day, region of the country, power plant capacity factors, and other factors.

Source: Bellemare, 2003.

would cost up to $1.5 billion, employ up to 500 people, and reach an initial annual production level of 3.5 million SWUs by 2010 (USEC, 2004b).

Purchasers of enrichment services view diversity and security of supply as vital from a commercial perspective (LES, 2004). The proposed NEF would supplement the domestic sources of enrichment services provided by USEC's Paducah Gaseous Diffusion Plant and the proposed American Centrifuge Plant. Beginning production in 2008 and achieving full production output by 2013, the proposed NEF would provide roughly 25 percent of the current and projected U.S. enrichment services demand (EIA, 2004a; EIA, 2003b).

1.4 Scope of the Environmental Analysis

To fulfill its responsibilities under NEPA, the NRC has prepared this Draft EIS to analyze the environmental impacts of the LES proposal as well as reasonable alternatives to the proposed action. The scope of this Draft EIS includes consideration of both radiological and nonradiological (including chemical) impacts associated with the proposed action and the reasonable alternatives. The Draft EIS also addresses the potential environmental impacts relevant to transportation.

This Draft EIS addresses cumulative impacts to physical, biological, economic, and social parameters. In addition, this Draft EIS identifies resource uses, monitoring, potential mitigation measures, unavoidable adverse environmental impacts, the relationship between short-term uses of the environment and long-term productivity, and irreversible and irretrievable commitments of resources.

The NRC Environmental and Safety Reviews

The focus of an Environmental Impact Statement (EIS) is a presentation of the environmental impacts of the proposed action.

In addition to meeting its responsibilities under the National Environmental Policy Act (NEPA), the NRC prepares a Safety Evaluation Report (SER) to analyze the safety of the proposed action and assess its compliance with applicable NRC regulations.

The safety and environmental reviews are conducted in parallel. Although there is some overlap between the content of a SER and an EIS, the intent of the documents is different.

To aid in the decision process, the EIS provides a summary of the more detailed analyses included in the SER. For example, the EIS does not address how accidents are prevented; rather, it addresses the environmental impacts that would result should an accident occur.

Much of the information describing the affected environment in the EIS also is applicable to the SER (e.g., demographics, geology, and meteorology).

Source: NRC, 2003b; NRC, 2002.

The development of this Draft EIS is the result of the NRC staff's review of the LES license application and the Environmental Report. This review has been closely coordinated with the development of the Safety Evaluation Report (SER) being prepared by the NRC to evaluate, among other aspects, the health and safety impacts of the proposed action. The SER is the outcome of the NRC safety review of the LES license application and Safety Analysis Report.

1.4.1 Scoping Process and Public Participation Activities

The NRC regulations in 10 CFR Part 51 contain requirements for conducting a scoping process prior to the preparation of an EIS. Scoping was used to help identify those issues to be discussed in detail and

while Westinghouse owns 19.5 percent of LES. The remaining 10 percent is owned by companies representing three U.S. electric utilities: Entergy Corporation, Duke Energy Corporation, and Exelon Generation Company LLC (LES, 2004).

LES has indicated that the principal business location is in Albuquerque, New Mexico. Furthermore, LES has stated that no other companies would be present or operating on the proposed NEF site other than services specifically contracted by LES (LES, 2004). The NRC intends to examine any foreign relationship to determine whether it is inimical to the common defense and security of the United States. The foreign ownership, control, and influence issue will be addressed as part of the NRC SER, and this issue is beyond the scope of this Draft EIS.

- The NRC is the licensing agency. The NRC has the responsibility to evaluate the license application for compliance with the NRC regulations associated with uranium enrichment facilities. These include standards for protection against radiation in 10 CFR Part 20 and requirements in 10 CFR Parts 30, 40, and 70 that would authorize LES to possess and use special nuclear material, source material, and byproduct material at the proposed NEF. The NRC is responsible for regulating activities performed within the proposed NEF through its licensing review process and subsequent inspection program. To fulfill the NRC responsibilities under NEPA, the environmental impacts of the proposed action are evaluated in accordance with the requirements of 10 CFR Part 51 and documented in this Draft EIS.

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