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Chief, Rules and Directives Branch
Mail Stop T6-D59
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Re: Comments on the Scope of Environmental Impact Statement for the Proposed LES Gas Centrifuge Uranium Enrichment Facility

To Whom It May Concern:

As demonstrated by the public health crisis and legacy of environmental contamination in Paducah, Kentucky, and Piketon, Ohio, the long-term public health effects and environmental impacts of large-scale uranium enrichment operations are profound. Therefore, in considering the environmental impact of a proposed new uranium enrichment facility—the National Enrichment Facility (NEF) proposed by Louisiana Energy Services (LES) near the city of Eunice, New Mexico—the broadest and most complete analysis of potential effects on the environment and public health ought to be conducted by the U.S. Nuclear Regulatory Commission (NRC). Moreover, each projected impact of the facility should be compared to a “No Action” scenario in which no plant is constructed on the site.

Per the NRC’s request for public comments regarding the appropriate scope of the forthcoming Environmental Impact Statement (EIS) [a requirement of the National Environmental Policy Act (NEPA)] for LES’s NEF, Public Citizen respectfully requests a broad, detailed examination of environmental impacts in the following specified areas. The breadth of the EIS should include, but not be limited to, the following issues:

Water Resources

In Section 4.1.2 (“Utilities Impacts”) of the NEF Environmental Report (ER),¹ LES notes that, in addition to two new electrical transmission lines, the NEF will require the construction of two new potable water supply lines in Lea County—one from the city of Eunice and the other from the city of Hobbs.

LES claims that the water requirements of the NEF, which would average 240 m³/day, are well within the capacity of these municipal water systems, which together have a capacity of 92,050 m³/day. While this may be true, strictly speaking, it totally neglects the severe long-term water shortage problem of Lea County, as documented in the *Lea County Regional Water Plan*.² The majority of potable water in Lea County is drawn from the Lea County Underground Water

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Basin (UWB), which is part of the Ogallala aquifer—one of the largest aquifer systems in the world and an essential water source for agricultural irrigation. According to water plan, groundwater in the basin is being withdrawn at a greater rate than it is being recharged, which has resulted in a water level drop of as much as 70 feet since the first use of groundwater in the 1920s. The report projects a doubling of water usage by 2040 and warns that “there is physically not enough water in the Basin to maintain an annual diversion of this magnitude.”

In an area with such finite water resources and a projected shortage, is it prudent to add a large industrial development with significant water consumption needs? In the EIS, the NRC should carefully consider this question, drawing on all available studies of regional water resources and projected consumption needs.

Contamination of Groundwater

The proposed NEF site sits atop the Santa Rosa aquifer in a landscape littered with oil wells and cratered by a large quarry.

Nevertheless, LES appears confident that the geology and hydrology of the NEF site, combined with the proposed facility's wastewater containment basins, will together prevent any water contaminated with radionuclides or hazardous substances from seeping into the groundwater. But if the history of radioactive materials containment is any indication, securing the integrity of the site from releases of contaminated substances will be a formidable, perhaps impossible, task in the long-term.

In Section 3.4.1.2 of the ER (“Facility Withdrawals and/or Discharges to Hydrologic Systems”), LES describes a wastewater discharge system wherein contaminated water (“routine plant liquid effluents”) will be discharged into a double-lined basin on the site. The ultimate disposal of the wastewater will be through evaporation and “impoundment of the residual dry solids byproduct of evaporation.” The long-term integrity of such a “closed-loop” system is unlikely, as manmade containment structures will eventually disintegrate and fail. Moreover, following evaporation, the report states that uranium particulates from the remaining waste may escape into the atmosphere through “resuspension,”³ perhaps ultimately reentering the water system. And what is to prevent quail or migratory birds—which may be subject to hunting and human ingestion—from entering the contaminated pond?

Additionally, the possibility that containers in which LES plans to store depleted UF₆—a highly toxic and radioactive substance—may leak and allow contaminants to seep into groundwater should be considered in the EIS.

The NRC must perform a thorough evaluation of this wastewater containment system and its ability to prevent the permeation of contaminated water over the long-term. Moreover, the NRC must review the geology and the hydrology of the site, as well as the relation of area aquifers to larger, regional aquifers, such as the essential Ogallala aquifer.

Waste Management

LES has not adequately developed a strategy for the disposition of the massive quantities of radioactive and hazardous waste it would produce over its operational lifetime. The company

states plainly in Section 4.13 of the ER that there "will be no onsite disposal of solid waste at the NEF," and thus recommends that there need not be an evaluation of onsite disposal in its consideration of waste management at NEF. Yet the NEF plans call for the construction of a very large pad for the "temporary" storage of depleted uranium hexafluoride (UF_6) in Uranium Byproduct Cylinders (UBCs). The pad would hold 15,727 13-ton UBCs—the amount of waste the plant would produce over 25 years. Why is such a large storage pad necessary if the waste will only remain there only temporarily?

LES mentions two U.S. Department of Energy (DOE) conversion facilities in Kentucky and Ohio to which depleted UF_6 will "likely be shipped."⁴ Yet neither of these facilities is currently in operation. And LES does not have a firm plan established for disposition of the UBCs, merely suggesting that the NEF will "pursue economically viable disposal paths for the UBCs as soon as they become available."⁵ Despite its claim that the UBCs will not remain onsite, LES argues that UBCs can be safely stored outdoors for decades.

LES's "preferred plausible strategy" for the disposition of depleted UF_6 is the possible sale to a "private sector conversion facility" for ultimate disposal in a "western U.S. exhausted underground uranium mine."⁶ No such conversion facility exists (though LES claims to be holding "discussions" with a private company), and president of the Cotter Corporation, which owns the Colorado mine referenced by LES, has said that his company is not interested in accepting the radioactive waste.⁷ LES also presents shipping the depleted UF_6 to Kazakhstan for conversion into U_3O_8 as a disposal option.

Moreover, LES has yet to make a determination as to whether its depleted uranium will be considered waste or a resource (probably for use in military applications); if it decides to consider it a resource, it may be beneficial for LES to keep the depleted UF_6 in its possession indefinitely in order to achieve maximum economic benefit from a future sale.

In addition to the depleted UF_6 , the NEF will annually produce approximately 191,691 pounds of "low-level" radiological waste and 669,884 gallons of contaminated liquids, much of which has uranic content.⁸ The waste that is not treated onsite will be shipped offsite to radioactive waste processing⁹ or disposal facilities, which exist in South Carolina, Tennessee, Kentucky, Ohio, and Utah. Each of these facilities is more than 1,500 miles from the NEF. Astonishingly, in its ER, LES does not consider the environmental impact of the waste it produces once it leaves the NEF site, as though the waste will not have any impact on the environment or public health as soon as another company takes possession of it. The NRC should not accept this false accounting.

The EIS should include a complete and thorough investigation into gaseous, liquid, and solid waste production, treatment, and disposal at the NEF. Included in this evaluation should be a consideration of long-term and cumulative environmental effects of the radioactive and hazardous waste created by the NEF, not excluding effects at any of the disposal or processing sites around the country. Moreover, the NRC should consider the environmental and public health effects of the use of depleted UF_6 in warfare, as this is a potential application of the waste that would be produced by the NEF.

Environmental Justice

Under the narrowly defined criteria in Appendix C of NUREG-1748 (“Environmental Review Guidance for Licensing Actions Associate with NMSS Programs”), LES predicts, in Section 4.11 (“Environmental Justice”), that the demographics of the area around the NEF site are such that no environmental justice review will be required.

The guidelines described in NUREG-1748 provide a rather narrow definition of what qualifies as a significant concentration of minority or low-income persons near the proposed site of a nuclear facility. The author of the regulatory guidelines, the Office of Nuclear Material Safety and Safeguards (NMSS), recommends a review of the demographic composition of the area encompassing a four-mile radius from the site. A high minority or low-income population percentage is considered to be at least 20 percentage points higher than the average county or state percentages. Since the demographic composition of the area surrounding the NEF does not meet these criteria, LES reasons that “no further evaluation of environmental justice concerns is necessary.”¹⁰

But this calculation skews the data because the minority and low-income population percentages are compared to county and state averages, but not to national averages. According to data from the 2000 U.S. Census, Hispanics make up 42.1 percent of the population of New Mexico—the highest percentage of any state—and 39.6 percent of the population of Lea County, but only 12.5 percent of the U.S. population at-large, a difference significantly greater than 20 percentage points. New Mexico also had the third-highest percentage of people living in poverty between 2000 and 2002 among all states, according to the U.S. Census Bureau.¹¹ To reduce the criteria to those defined by the NMSS is to distort the true situation of the area near the NEF site relative to the rest of the country.

Even the NMSS document clearly states that the criteria it defines are only intended to be used as guidelines and should not be followed absolutely, suggesting that even in cases where the defined demographic data analysis does not indicate a disproportionately high low-income or minority population, an environmental justice review may be conducted if it becomes apparent through public comments or scoping activities that such a population may be adversely affected by the proposed action.

As part of its EIS, the NRC should conduct a full investigation into the demographic makeup of the area near the proposed NEF, taking into account other nuclear facilities and environmental hazards in the area—such as the Waste Isolation Pilot Project (WIPP) and the Waste Control Specialists (WCS) toxic and radioactive waste repository, a mere mile away in Texas—and their cumulative effect on public health and ecological integrity. Any disproportionate effect on minority or low-income populations should be subject to further investigation. Moreover, any claims to the land on which the NEF would be built by American Indian Tribes, such as the Mescalero Apache tribe, should be thoroughly investigated.

Transportation of Hazardous Materials

In Section 4.2.7 (“Radioactive Material Transportation”) of its ER, LES does not provide a detailed analysis of the hazards of transporting radioactive materials to and from its proposed facility, instead deferring to generic NRC analyses (produced in 1977 and 1987) that it considers to be a satisfactory assessment of the issue.

Despite LES's reliance to these studies, the NRC needs to consider in its EIS the particular situation of the proposed NEF. The facility is to be located in New Mexico, far from the high concentration of nuclear fuel facilities in the Midwest and Southeast as well as the uranium fuel fabrication facility in Richland, Washington. The sole domestic uranium hexafluoride production facility (there is another in Ontario, Canada)—which would provide the uranium "feed" for the NEF—is located in southern Illinois (1,040 miles from the NEF site), very near the presently-operating uranium enrichment facility in Paducah and the recently-retired plant in Piketon (where the operator, USEC Inc., is planning a new gas centrifuge enrichment facility). The proximity of the UF₆ production plant to the enrichment facilities—and their proximity to the concentration of fuel fabrication facilities in Tennessee, Virginia, and the Carolinas—lessens the risk of a serious accident, since the transportation of UF₆ is very dangerous.¹² But LES anticipates shipping its product over great distances to fuel fabrication facilities in Washington and the Carolinas, each roughly 1,500 miles from the NEF site.

The NRC's EIS should include a precise, detailed analysis of the increased hazards of transporting UF₆ over great distances, especially to a site accessible only by two-lane highways. All potential accident scenarios should be carefully addressed.

Worker and Public Health

The NRC's EIS ought to include a complete investigation into potential worker and public exposure to toxic and radioactive materials resulting from operation of the NEF. The cases of the enrichment plants in Piketon and Paducah raise serious questions about the safety of the proposed LES facility.

Uranium enrichment facilities have a tarnished history of and extreme environmental irresponsibility and harm to workers. Lockheed Martin and Martin Marietta, operators of the Paducah plant in the 1980s and 1990s, have been subject to a massive class-action lawsuit filed by former employees at the plant, who claim that they are suffering from illnesses and diseases caused by their exposure to toxic chemicals and radiation on the job. The plaintiffs claim that they were not made aware of the degree of danger involved in their occupations.¹³ In addition, in October of 2000, President Bill Clinton signed the "Energy Employees Occupational Illness Compensation Act," which created a program to provide compensation to former DOE nuclear-complex workers and their families for medical expenses and suffering due to illness caused by the hazards to which they were exposed in their occupations. Nearly 1,500 cases have been filed and almost \$80 million has already been paid out to former workers of the Piketon enrichment plant alone.¹⁴

In addition to the hazards to which workers at Paducah were unknowingly exposed, the plant's pollutants have also put the general public in harm's way and defiled the local environment. Eventual cleanup of the Paducah complex is expected to cost \$240 billion and take at least 75 years.¹⁵

In its EIS, the NRC should take into account past abuses and acts of malfeasance at domestic uranium enrichment facilities in determining the potential public health impact of the proposed plant.

Need for the NEF

The NRC should conduct a full investigation into the need for a new uranium enrichment facility in the U.S. Adding another domestic producer of enriched uranium would profoundly increase the environmental impacts of the full gamut of nuclear fuel cycle operations in this country. Whether the nation needs another enrichment facility should be a central area of review in the forthcoming EIS. Additionally, overcapacity in the global uranium enrichment market should be considered.

The LES consortium is competing with USEC to build another uranium enrichment facility in the States. USEC, a former government-owned company, was privatized in 1998, and has since suffered from serious financial woes. Against the wishes of the U.S. government, USEC was forced to close its Portsmouth Gaseous Diffusion Plant (which had been operating at one-quarter capacity) in Ohio, in June of 2000, leaving its Paducah, Kentucky plant (which is owned by the DOE and leased by USEC) as the only operating uranium enrichment facility in the country. The Paducah facility still does not run at full capacity, and USEC is now seeking to develop a new uranium enrichment plant to replace its aging Paducah plant.

USEC provides over half of the enriched uranium to domestic nuclear power reactors (about 58 percent in 2002¹⁶). The remainder of enriched uranium is imported, and is subject to tariffs. But the large nuclear power companies—including Exelon, Entergy, and Duke, which are part of the LES consortium—want to secure a cheap, domestic source of enriched nuclear fuel.

The foreign partners in the consortium also have an interest in sharing ownership in a plant in the U.S. Urenco, for example, must now pay an extra 3.7 percent duty on its exports to the U.S., as ordered in early 2002 by the Commerce Department and the U.S. International Trade Commission, which found that Urenco and other foreign nuclear fuels providers had been dumping their products into the U.S. market at unfairly cheap prices.

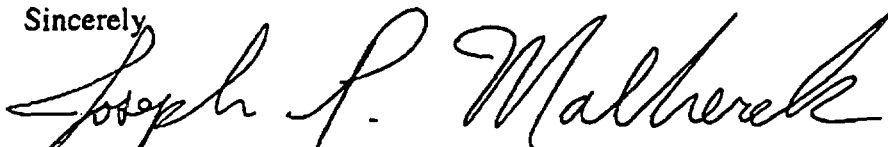
The question of need for the facility should be focused on the best interests of the country, not the interests of a few lucrative corporations.

Other Areas

In addition to the areas of investigation described above, the NRC should conduct a complete, thorough evaluation of the information presented by LES in its ER, verifying the company's claims and seeking out more scientific data about the potential impacts of the plant. Each area of impact covered in the report should receive at least equal treatment in the NRC's EIS.

Thank you for taking our comments into account on this important matter.

Sincerely,



Joseph F. Malherek

Policy Analyst, Public Citizen's Critical Mass Energy and Environment Program

¹ *National Enrichment Facility Environmental Report*, Dec. 2003.

² *Lea County Regional Water Plan*, Prepared for the Lea County Water Users Association by Leedshill-Herkenhoff, Inc., John Shomaker & Associates, Inc., and Montgomery & Andrews, P.A. 7 Dec. 2000. <page?>

³ *National Enrichment Facility Environmental Report*, "Effluent Discharge," Dec. 2003: 3.12-7.

⁴ *National Enrichment Facility Environmental Report*, "Waste Disposal Plans," Dec. 2003: 4.13-2.

⁵ *National Enrichment Facility Environmental Report*, "Waste Disposal Plans," Dec. 2003: 4.13-3.

⁶ *National Enrichment Facility Environmental Report*, "Waste Disposal Plans," Dec. 2003: 4.13-8.

⁷ Fleck, John, "Nuke Plant's Waste Plans Questioned," *Albuquerque Journal* 7 Jan. 2004.

⁸ "Table 6.12-1: Estimated Annual Radiological and Mixed Wastes" and "Table 3.12-4: Estimated Annual Liquid Effluent," *National Enrichment Facility Environmental Report*, Dec. 2003.

⁹ The depleted UF₆ conversion facilities cited by LES are not presently operating.

¹⁰ *National Enrichment Facility Environmental Report*, "Environmental Justice," Dec. 2003: 4.11.

¹¹ Proctor, Bernadette D. and Joseph Dalaker, "Poverty in the United States: 2002," *Current Population Reports* (U.S. Department of Commerce, Economics and Statistics Administration, and U.S. Census Bureau) Sept. 2003.

¹² Goldstick, Miles, *The Hex Connection: Some Problems and Hazards Associated with the Transportation of Uranium Hexafluoride*, diss., Swedish University of Agricultural Sciences, Dept. of Ecology and Environmental Research (Uppsala, Sweden: SLU/Repro, 1991).

¹³ Warrick, Joby, "In Harm's Way, And in the Dark; Workers Exposed to Plutonium at U.S. Plant," *The Washington Post*, A Section, 8 Aug. 1999.

¹⁴ Bussa, Richard, "DOE is looking for workers impacted by weapons construction," *Community Common*, 19 Feb. 2004.

¹⁵ Warrick, Joby, "In Harm's Way, And in the Dark; Workers Exposed to Plutonium at U.S. Plant," *The Washington Post*, A Section, 8 Aug. 1999.

¹⁶ This figure includes the highly enriched uranium (HEU) from the former Soviet nuclear weapons stockpile that was "downblended" (meaning that it was reprocessed so that it is suitable for use in commercial nuclear reactors) by USEC under the U.S.-Russia "Megatons to Megawatts" nonproliferation agreement. Taken from "Owners and Operators of U.S. Civilian Nuclear Power Reactors Purchases of Enrichment Services by Origin Country and Delivery Year, 1998-2002." *Uranium Industry Annual 2001*: Table 25. Energy Information Administration, Department of Energy. May 2003. <http://www.eia.doe.gov/cneaf/nuclear/uia/table25.html>.