

**RELATED CORRESPONDENCE**DOCKETED  
USNRC

September 14, 2004 (2:53PM)

**UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION**OFFICE OF SECRETARY  
RULEMAKINGS AND  
ADJUDICATIONS STAFF**BEFORE THE ATOMIC SAFETY AND LICENSING BOARD**

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In the Matter of

Docket No. 70-3103

Louisiana Energy Services, L.P.  
National Enrichment FacilityASLBP No. 04-826-01-ML

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**INTERROGATORIES AND DOCUMENT REQUEST  
ON BEHALF OF  
PETITIONERS NUCLEAR INFORMATION AND RESOURCE SERVICE  
AND PUBLIC CITIZEN  
TO APPLICANT LOUISIANA ENERGY SERVICES, L.P.**

Petitioners, Nuclear Information and Resource Service and Public Citizen ("NIRS/PC"), hereby request that Louisiana Energy Services, L.P. ("LES") answer the following interrogatories separately and fully in writing under oath within 14 days after service of this request. NIRS/PC also request that LES submit a written response to this request for production of documents and provide access for inspection and copying by undersigned counsel to the documents responsive to the requests herein within 30 days after service of this request.

1. Instructions: Each of the following requests is a continuing one pursuant to 10 CFR Sections 2.706(b) and 2.707, and NIRS/PC hereby demand that, in the event that at any later date LES obtains or discovers any additional information which is responsive to these interrogatories and this request for production of documents, LES shall supplement its responses to this request promptly and sufficiently in advance of hearing. Such supplementation shall include, but not be limited to:

- a. the identity and location of persons having knowledge of discoverable matters;
  - b. the identity of each person expected to be called as an expert witness at any hearing, the subject matter on which he is expected to testify, and the substance of his testimony; and
  - c. any new information that makes any response hereto substantially incorrect.
2. If LES objects to or refuses to answer any interrogatory under a claim of privilege, immunity, or for any other reason, please indicate the basis for asserting the objection, privilege, immunity, or other protection, and describe the factual basis for asserting the objection, privilege, immunity, or other protection in sufficient detail to permit the administrative judges in this matter to ascertain the validity of such assertion.
3. If LES withholds any document covered by this request under a claim of privilege, immunity, or other protection, please furnish a list identifying each document for which such privilege, immunity, or other protection is asserted, together with the following information as to each document: date, author, recipient, recipients of copies, and the job title of any such persons, the subject matter of the document, the basis for asserting the privilege, immunity, or other protection, and the identity of the person on whose behalf the privilege, immunity, or other protection is asserted.
4. Definitions: Each of the following definitions, unless otherwise indicated, applies to and shall be a part of each interrogatory and request for production which follows:
  - a. "LES," "you," and "your" refer to Louisiana Energy Services, L.P. and, in those instances where information necessary to respond to any interrogatory is

not within the body of knowledge possessed by LES or where documentation necessary to respond to a request for production of documents is not in LES's possession, custody, or control, but is within the body of knowledge possessed by LES's constituent partners or within their custody or control, then "LES," "you," and "your" also refer to all of LES's partners, employees, agents, subcontractors, or other representatives.

b. "Document" means the original and any nonidentical copies of all written, printed, typed, recorded, graphic, photographic, or electronic media however produced or reproduced and wherever located, over which you have possession, custody or control or over which you have the right to assert possession, custody or control. The term "document" includes, but is not limited to, records, correspondence, memoranda, reports, telegrams, telexes, wire communications, diaries, notes, minutes, instructions, demands, data, schedules, notices, recordings, analyses, sketches, manuals, brochures, calendars, ledgers, invoices, charts, drafts, computer tapes, computer discs, microfilm, microfiche, blueprints, drawings, contracts, agreements, files, and any other written or graphic matter.

c. "Describe" shall mean:

- i. In connection with a person, state the name, last known home and business address, last known home and business telephone number (including mobile phones), and last known place of employment and job title;

- ii. In connection with a document, give a description sufficient to identify uniquely the document, including the author, date, title, caption, the name of the signatory and addressee and any recipients of copies, the file source, and the general subject matter;
  - iii. In connection with an action or communication, describe the date of the occurrence, the persons present, and any documents referring to the occurrence.
- d. "NEF" shall mean the proposed National Enrichment Facility, which is the subject of this proceeding.
  - e. "Person" includes any individual, association, corporation, partnership, joint venture, or any other business, legal, or governmental entity.
  - f. Discovery sought herein encompasses any material contained in the personal or private files of LES employees, representatives, agents, or officers.

**Interrogatories:**

1. Describe each person who was consulted or supplied information for use in preparing answers to these interrogatories and document requests and identify the questions in connection with which such person was consulted or supplied information.
2. According to statements contained in the NEF application, sewage is to be discharged to six leach fields<sup>1</sup>.
  - a. Where will this sewage go after it is discharged?
  - b. Please describe each document referring or relating to flow, fate, and transport of water or constituents discharged from the sewage system.

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<sup>1</sup> Louisiana Energy Services, 2004a, page 8.8-2

3. According to statements contained in the NES application, stormwater runoff from the plant will be directed to an unlined evaporation basin<sup>2</sup>.
  - a. How much of this water will infiltrate into the subsurface?
  - b. Where will it go after it enters the subsurface? Please state the projected rate of flow, depth, and volume of water projected to enter the subsurface.
  - c. Please describe each document referring or relating to flow, fate, and transport of water or constituents discharged to the evaporation basin referred to.
4. According to the NEF application, two lined evaporation basins are to be installed<sup>3</sup>.
  - a. How much water will leak from these basins? Please state the projected timing, rate and volume of water leaking from each basin.
  - b. Where will it go after it enters the subsurface? Please state the projected rate of flow, depth, and volume of water projected to enter the subsurface.
  - c. Please describe each document referring or relating to flow, fate, and transport of water or constituents discharged to the evaporation basins referred to.
5. As to liners planned for installation in evaporation basins, please state the terms and conditions of any guarantee of such liners against leakage and describe any documents discussing or relating to such guarantee.
6. Has the quality of the water that will be discharged to the basins and leach fields been estimated? If so, please provide the range of concentrations of each constituent that is expected to be contained in the discharges.

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<sup>2</sup> Louisiana Energy Services, 2004a, page 8.8-3.

<sup>3</sup> Louisiana Energy Services, 2004a, page 8.8-3.

7. According to the NEF application, cuttings from one of the borings drilled in September 2003 were "*slightly moist*"<sup>4</sup>. In addition, the clay at the bottom of boring B-2 was "*moist*"<sup>5</sup>.
- Please state your best judgment as to the origin of such moisture.
  - Please describe each document referring to such observed moisture or its possible origins.
8. According to the NEF application, the shallow (0 – 50 feet depth) materials underlying the NEF site consist of sand, alluvium, and caliche<sup>6</sup>:
- Please state whether the hydraulic properties (*e.g.*, hydraulic conductivity, porosity) of these materials been measured, and describe any document relating or referring to such hydraulic properties.
9. Please state whether any hydraulic tests using well bores (*e.g.*, pump tests, slug tests) been performed on any of the wells at or near the proposed site. If your answer is yes,
- Please state the conclusions developed in each such test, and
  - Describe any document relating or referring to such test or its results.
10. According to the NEF application, seven monitor wells are to be installed at the facility<sup>7</sup>. As to each such well, please state:
- Which units will such well monitor?
  - What constituents will be monitored by such well?

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<sup>4</sup> Louisiana Energy Services, 2004a, page 3.4-2. Cuttings from depths of 6 – 14 feet.

<sup>5</sup> Louisiana Energy Services, 2003b, figure 3.2-11.

<sup>6</sup> Louisiana Energy Services, 2004a, table 3.3-1.

<sup>7</sup> Louisiana Energy Services, 2004a, figure 6.1-2.

11. According to the NEF application, water was found in Chinle monitor well MW-2<sup>8</sup>. Please state your best judgment as to where this water came from, and describe any documents relating or referring to such water.
12. Please state whether water has been found in any other wells at the site. If so, please state your best judgment as to where this water came from, and describe any documents relating or referring to such water.
13. According to the application, a pesticide was detected in a groundwater sample collected from Chinle monitor well MW-2<sup>9</sup>. It is stated in the Environmental Report that the detection was “... *likely due to field or laboratory contamination.*”<sup>10</sup> Please explain the basis for this claim and describe any documents relating or referring to such detection or its interpretation.
14. Please state your best judgment whether, if contaminants are detected in groundwater at the proposed NEF facility, it will be possible to distinguish them from contaminants that may have originated at the Andrews County, Texas Waste Control Specialists site or the Lea County Landfill? If so, please explain how such distinction will be made and describe any documents relating or referring to such possible distinction.
15. The NEF application states that the Santa Rosa Aquifer “... *is considered not potable.*”<sup>11</sup> Please explain the basis for such statement and describe any documents relating or referring to such statement.

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<sup>8</sup> Louisiana Energy Services, 2004a, page 3.4-7.

<sup>9</sup> Louisiana Energy Services, 2004a, page 3.4-8.

<sup>10</sup> Louisiana Energy Services, 2004a, page 3.4-8.

<sup>11</sup> Louisiana Energy Services, 2004a, page 4.12-9.

16. With respect to water contained in the Santa Rosa aquifer, please describe any document relating or referring to such water, and state:
- a. The elevation, volume, and direction of flow of such water.
  - b. The rate of flow.
  - c. The point of discharge.
17. Please state whether any studies or other evaluations have been performed to determine whether there are fractures or other fast flow pathways that could allow water to flow rapidly from the alluvium to the Chinle, or from the Chinle to the Santa Rosa. If so, please describe each document relating or referring to such study, evaluation, or the results thereof.
18. In the NEF application, the complete composition of the UF<sub>6</sub> feedstock has not been specified<sup>12</sup>. Please identify all substances (including trace metals and organics) that may be contained in the feedstock and their proportion by weight or volume.
19. The application states that water used at the proposed facility would be pumped from the Lea County Underground Water Basin (Ogallala Aquifer)<sup>13</sup>. Groundwater in this basin is being pumped at a rate faster than it is being recharged<sup>14</sup>. Please state, with reference to the projected operating life of the NEF and any period of decommissioning and closure activities, how such pumpage is expected to affect water levels and the productivity of the Lea County Underground Water Basin.
20. The Environmental Report, page 1.1-6, gives the future enrichment tails assay for enrichment facilities in the United States as 0.32%. Please state whether this is also

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<sup>12</sup> Louisiana Energy Services, 2004a, page 1.2-2.

<sup>13</sup> Louisiana Energy Services, 2004a, page 4.4-5; and Leedshill-Herkenhoff, 2000, page 1 of Executive Summary and page 7-2.

<sup>14</sup> Leedshill-Herkenhoff, 2000, page 1 of Executive Summary and page 5-4.



the assumed average tails assay for the NEF. If it is not, please give the assumed average tails assay for the NEF for each year of projected operation, along with the corresponding average over the life of the NEF.

21. Using the term "standard reload" to denote the quantity of enriched uranium required to manufacture an annual reload for a standard 1000-MW light water reactor, please state how many "standard reloads" LES anticipate that the NEF will be able to produce per year.
22. In the application, on page 1.1-6 of the Environmental Report, assumed future tails assays are given for the U.S. and U.K. (0.32%), Japan (0.28%-0.30%), France (0.27%), the CIS states and Eastern Europe (0.11%), and all other (0.30%). Please give the informational bases for these figures, and describe any documents referring or relating to such figures.
23. With regard to (a) the assumed future tails assays stated on page 1.1-6 of the Environmental Report and (b) the annual estimates of world enrichment requirements (after adjusting for plutonium recycle) given in Table 1.1-3, please state your best estimate as to what the figures in Table 1.1-3 would be if the assumed tails assays were increased by 50% (e.g., if the 0.32% for the U.S. and U.K. became 0.48%), while the output enrichment levels (in terms of the percentage of U-235 in the product stream) were unchanged. Please state all assumptions and calculations used in answering this question.
24. Please refer to the scenario of higher tails assays outlined in the preceding question. Please provide LES's best estimates of the impact (in terms of both annual quantities of materials and annual average unit costs) of increasing the tails assays, as stated

above, on the other stages of the nuclear fuel cycle (mining, conversion, fabrication, disposal, etc.). Please state all assumptions and calculations used in answering this question, and describe all documents relating or referring to such estimates.

25. Tables 1.1-1 and 1.1-3 of the Environmental Report list projected nuclear power capacity and annual enrichment requirements for five different years (or intervals) during 2002-2020 for the world as a whole and for five world regions. The ratio of installed capacity (in gigawatts) to enrichment requirements (in million SWU) differs considerably among the regions. (For example, for the U.S. the ratio is around 8 to 9, while the ratio for Western Europe is around 11, with 6 for CIS & E. Europe, 9 to 10 for East Asia, and 20 to 30 for Other.) As to each region, please explain why, in your judgment, the ratio differs from other regions. If differences among the respective ratios are partly attributed to different usage of mixed oxide fuel, please quantify that effect. Similarly, if some of the differences are attributed to greater (or lesser) startups of new reactors (with correspondingly greater or lesser fuel requirements), please quantify that effect. If other factors also account for some of the differences, please describe and quantify the effects of each. Please describe all documents relating or referring to such estimates.

26. At page 1.1-9 of the Environmental Report, it is said that "the annual nameplate capability [of the Paducah gaseous diffusion plant] of 11.3 million [SWU] is not physically attainable without capital upgrades to the plant, which are not expected."

As to the capital upgrades, please state:

- a. A brief description of each upgrade.
- b. The projected capital and operating cost of such upgrade.

- c. The contribution such upgrade would make to the capacity of the plant.
- d. The capacity of the Paducah plant without such upgrade.
- e. An explanation why such upgrade is not expected, and
- f. Please describe all documents relating or referring to such possible upgrades.

27. On page 1.1-9 of the Environmental Report it is stated, "LES estimates that approximately 1.5 million SWU per year of the 8 million SWU capability [of the Paducah plant] is not economically competitive due to very high electric power costs in that operating range." Please explain this statement, and include:

- a. Actual or estimated electric power costs termed "very high."
- b. The "operating range" referred to.
- c. Actual or estimated electric power costs that apply outside the range referred to.
- d. An explanation of the derivation of the "approximately 1.5 million SWU" figure, and
- e. A description of all documents relating or referring to such estimates.

28. On page 1.1-10 of the Environmental Report it is said that 10 million SWU of annual enrichment capacity in Russia "does not meet material specifications for use in Western power plants." Please explain this statement, and include:

- a. A description of the purported mismatch(es) in material specifications.
- b. A description of the changes in the design and/or operation of the Russian enrichment capacity that would enable it to meet Western specifications.
- c. Your best estimate of the capital and operating costs associated with such changes, and

- d. A description of all documents relating or referring to such asserted mismatches or estimates.
29. On page 1.1-12 of the Environmental Report it is stated that “the U.S. defense establishment is reported to hold approximately 490 metric tons [of] HEU in various forms,” and a 1997 report is cited. Please give your most current estimate of the amount of highly enriched uranium being held by the U.S. defense establishment, and describe the source documents.
30. Eight scenarios are outlined in the “Market Analysis” in Section 1.1.2.4 of the Environmental Report. For each such scenario, please:
- a. State your best estimate of the average (for either the U.S. or the World) cost per SWU (either annual or “lifetime” averages) associated with such scenario,
  - b. Explain the derivation of such cost figures, and
  - c. Describe any documents relating or referring to such estimates.
31. At page 1.1-19 of the Environmental Report you refer to the “negative financial impact of operating [the] Paducah [gaseous diffusion plant] at low production levels” (less than 3 million SWU per year). Please:
- a. Quantify this negative impact,
  - b. Explain the derivation of such figure, and
  - c. Describe any documents referring or relating to such calculations.
32. Table 1.1-5 of the Environmental Report states the capacity of Urenco’s centrifuge enrichment facility in Europe as 6.0 million SWU per year in 2002, increasing to 6.5 million by the end of 2003 and to 8.0 million during or before 2016. Please state:

- a. The total enrichment services (in SWU per year) that this Urenco facility provided to U.S. reactor customers in each of the five most recent years for which data are available, and
- b. Your latest projections of the total enrichment services (in SWU per year) that this Urenco facility is expected to provide to U.S. reactor customers in each of the ten years immediately following those five years, and
- c. Please describe all documents relating or referring to such services or projections.

33. On page 1.1-21 of the Environmental Report you state that "Urenco perceives building new centrifuge capability in the U.S. as a more attractive option [than] expanding its centrifuge enrichment capability in Europe." Please state the estimated total cost per SWU, on a straight cost basis, of new centrifuge enrichment capability (a) in Europe and (b) at the NEF facility in New Mexico. Please provide all supporting assumptions and calculations, and describe all documents relating or referring to such estimates.

34. Page 1.2-1 of the Environmental Report gives the estimated construction cost of the NEF as approximately \$1.2 billion in 2002 dollars (excluding escalation, contingency, interest, tails disposition, decommissioning and equipment replacement). Please:

- a. Indicate how this estimate is broken down by calendar year (i.e., please provide your complete cash-flow projection consistent with this estimate),

- b. Provide estimates of the costs associated with escalation, contingency, interest and equipment replacement (giving separate estimates for each item), either on a dollar basis or a percentage basis, as appropriate,
  - c. Break down the total cost estimate among major expenditure categories such as (but not limited to) technology license fees, design, architect-engineer costs, construction management, plant equipment, construction equipment, construction materials, land, buildings, skilled labor, manual labor, and supplies,
  - d. Include complete descriptions of how costs were estimated for each of these categories, and
  - e. Describe all documents referring or relating to such calculations.
35. On page 2.1-5 of the Environmental Report you state that Lea County, N.M., is expected to issue an industrial revenue bond for the NEF in the amount of \$1.8 billion. Please explain why LES is seeking \$1.8 billion in bond funding for a project whose cost is currently estimated to be \$1.2 billion (in 2002 dollars), and describe any documents relating or referring to such bond funding.
36. Please provide all calculations leading to all of the entries contained in Tables 4.13-2, 4.13-3, and 4.13-4 of the Environmental Report.
37. Please provide a full description of the terms of the financial assurance that LES intends to furnish as assurance for disposing of depleted uranium, as referenced on Page 4.13-3 of the Environmental Report.

38. When (as to month and year), in LES's estimation, will the planned DOE conversion facilities at Portsmouth, OH and Paducah, KY be ready to receive depleted UF6 from the NEF? Please provide the assumptions and reasoning underlying this estimate.
39. Table 10.1-14 of the Safety Analysis Report estimates the cost (in January 2002 dollars) to decommission the NEF as \$837.5 million, of which \$731.2 million is the cost of tails disposition, and \$106.3 million is the cost of the separation modules and other buildings. Please identify at least three other decommissioned facilities that qualify as templates to estimate the cost to decommission the NEF, and as to each please:
- Give the costs (in constant dollars referenced to an appropriate year) actually expended to decommission each facility,
  - Indicate the source(s) of each of the cost figures, and
  - Explain how the historical cost figures do (or do not) support the cost estimate of \$106.3 million to decommission the NEF (exclusive of tails disposition).
40. On page 10.1-3 of the Safety Analysis Report you state that "Activities and costs [for decommissioning the NEF] are based on actual decommissioning experience in Europe." As to the decommissioning experience referred to, please state:
- The facility (or facilities) referred to,
  - The date(s) on which they were decommissioned,
  - The total costs (in constant U.S. dollars) of decommissioning, and
  - The total costs, set forth in major categories using the same level of detail as in the Application.

41. Page 10.1-2 of the Safety Analysis Report lists a half-dozen “key assumptions” made by LES in developing decommissioning cost estimate for the NEF, namely, (1) that the NEF will operate “routinely” over its life, (2) that non-radioactive materials and structures will not have to be removed or disposed of beyond the work necessary to terminate the NRC license, and (3) that present-day regulatory requirements will govern the work. Please state:

- a. Whether, and to what extent, these assumptions are necessary to support the 25% contingency allowance indicated in Table 10.1-14 of the Safety Analysis Report,
- b. An allocation of components of this 25% allowance to each of the three assumptions noted,
- c. How 25% was selected as the contingency allowance, setting forth your calculations and indicating the contingencies it is intended to capture, and
- d. Describe all documents relating or referring to a contingency allowance in estimating decommissioning costs.

42. Please provide a full description of the “surety method” to which LES refers on page 10.2-1 of the Safety Analysis Report in discussing decommissioning of the NEF., stating:

- a. The identity of the parties that will guarantee decommissioning
- b. The specific financing mechanisms that will furnish financial assurance,
- c. The cost of such financial assurance, and
- d. Explain the statement, “LES intends to provide continuous financial assurance from the time of receipt of licensed material to the completion of



decommissioning and termination of the license" (SAR, page 10.2-1) (In other words, how, exactly, will this financial assurance be provided?)

43. Please state your best estimate of the rate (in dollars per year) at which LES will provide financial assurance for decommissioning for (a) accumulated enrichment tails and (b) the NEF equipment and buildings. The answer should be in the form of two annual schedules of cumulative financial assurance (for the tails and the equipment, respectively).
44. Referring to Table 10.1-11 of the Safety Analysis Report, and to the two rows under the heading "Separation Building Modules," please explain the relationship between the figures in the column labeled "Quantity" (given as 45,210 square feet for both rows), the figures in the column labeled "Unit Cost" (1,545 and 294, respectively, in \$/unit), and the figures in the column "Total Cost Equipment (\$6,490,000 and \$1,240,000, respectively).
45. Please state whether you, LES, take the position that depleted uranium hexafluoride (DUF6) or any derivative thereof, generated as a byproduct of enrichment operations at the NEF, would or would not constitute waste, and explain the basis for your position.
46. Please identify each occasion on which it has been "ultimately determined" that depleted uranium is low-level radioactive waste, in the sense in which that term is used in Sec. 3113 of the U.S. Enrichment Corporation Privatization Act.
47. Please describe each document relating or referring to whether depleted uranium constitutes low-level radioactive waste, or to a determination whether depleted uranium constitutes low-level radioactive waste.

48. Please describe each environmental analysis, pursuant to the National Environmental Policy Act, of the possible disposal of depleted uranium (a) in accordance with one or another proposed or final provision of 10 CFR Part 61 or (b) in accordance with orders, rules, or regulations other than 10 CFR Part 61, including but not limited to orders, rules or regulations governing disposal by the U.S. Department of Energy.
49. Please fully describe the form of depleted uranium waste (if any) to be generated by the NEF when it is prepared for disposal, including but not limited to the chemical form, radionuclides present, and the radioactivity of the waste form in nanocuries per gram.
50. Please fully describe the form of depleted uranium waste (if any) currently generated, or planned to be generated, by other United States enrichment plants located, or planned to be located, at Paducah, KY, or Piketon, OH, when prepared for disposal, including but not limited to the chemical form, radionuclides present, and the radioactivity of the waste form in nanocuries per gram.
51. Please identify the regulatory standards that would apply to disposal of depleted uranium waste to be generated by the NEF, if it were disposed of at:
- a. Waste Control Specialists in Andrews County, TX.
  - b. Barnwell, South Carolina.
  - c. Hanford, WA.
  - d. Envirocare, in Clive, UT.
  - e. Nevada Test Site, NV.

52. Please identify the regulatory standards that would apply to disposal of depleted uranium waste after conversion at plants proposed to be built by the U.S. Department of Energy at Paducah, KY, or Piketon, OH.
53. Please describe any document containing or referring to an analysis of the possible land disposal of depleted uranium having a radioactivity in excess of 100 nanocuries per gram (a) in accordance with 10 CFR Part 61 provisions applicable to Class A low level waste or (b) in accordance with any other orders, rules, or principles.
54. Please state whether you concur that the mortality factor for U-238 in drinking water, according to the EPA Regulatory Guide, is  $1.13\text{E-}9$  per Becquerel, and that such factor is less than a factor of two less than the mortality factor for Americium-241, a principal transuranic radionuclide. If so, please state whether there is any health-based reason not to dispose of U-238 contaminated waste, of radioactivity in excess of 100 nanocuries per gram, with the same level of security as transuranic waste of similar radioactivity, and state the reasons.
55. If LES seeks to defend the safety of shallow land burial, in accordance with 10 CFR Part 61, as a method to dispose of depleted uranium having a radioactivity in excess of 100 nanocuries per gram and a half life in excess of four billion years, please state your defense of that practice.
56. Please describe your site selection process for a possible underground mine disposal site for depleted uranium and describe any documents concerning such process.
57. Please identify each abandoned or disused underground mine that would be available for use as a disposal facility for depleted uranium during the time required to serve the NEF, and as to each:

- a. State the exact location of the mine,
  - b. State the identity of the owner,
  - c. Describe the status of any discussions concerning the possible use of such mine for disposal of depleted uranium, and
  - d. Describe any documents relating or referring to the possible use of such mine for disposal of depleted uranium.
58. Please state whether you concur with the cost estimates contained in the LLNL Report for the cost of disposing of depleted uranium in an underground mine, and if not, explain your reasons for disagreement.
59. Please describe all documents, not previously produced, concerning or relating to estimates of the cost of disposal of depleted uranium, including but not limited to the cost of constructing an underground mine or other facility for disposal of depleted uranium.
60. Concerning possible disposal of depleted uranium in an underground mine, please state whether the possible chemical changes occurring to depleted uranium in the form of  $\text{DU}_3\text{O}_8$  have been analyzed, state what changes have been identified, identify the effect of such changes on waste containment (*e.g.*, enhanced solubility), and describe any documents concerning such analyses.
61. Please state whether, in most circumstances, uranium is more mobile in soil and rock than (a) plutonium, (b) neptunium, or (c) americium.
62. Please identify each person or firm that, to your knowledge, has within the past 20 years considered the possible construction of a plant to convert the depleted uranium hexafluoride produced by a uranium enrichment plant, and as to each, describe any

documents relating or referring to such consideration, and state the current state of such person's planning or other consideration.

63. Please identify the exact process of conversion of  $\text{DUF}_6$  to another form of uranium that LES intends to apply (or have applied) to depleted uranium generated by the NEF,

- a. Identify any byproducts or waste products of that conversion process,
- b. State whether, and to what extent, such byproducts or waste products are expected to contain or include radioactive constituents and if so to what extent,
- c. Identify the disposition process for such byproducts or waste products and the cost or revenue (annually and for the project) to be generated by such byproducts or waste products, and
- d. State the basis for your conclusion, if any, that any such product could be sold commercially.

64. With regard to the cost data derived from the Lawrence Livermore National Laboratory report referred to in Tables 4.13-2 through 4.13-4 and 4.13-7 of your Environmental Report, please state whether any adjustment is appropriate to account for the difference in throughput and total volume of depleted uranium considered in the LLNL Report, as compared to the proposed NEF. Please explain what adjustment is appropriate and set forth your reasoning and calculations.

65. Please describe all documents, not previously produced, concerning or relating to the cost of converting depleted uranium hexafluoride to another form for purposes of disposal.

### **Document requests**

1. Please provide all documents identified or described in response to any of the foregoing interrogatories.
2. Please provide an organization chart showing the structure of Urenco including all its subsidiaries, affiliates, and any other entity in which it has an interest by country worldwide.
3. Please provide annual reports for Urenco for each year for the last ten years.
4. Please provide annual reports for LES from its inception to the most recent.
5. Please provide documents explaining the relationship of the LES subsidiary referred to on ER p. 1.0-1 (bottom), which is engaged in the business of trading in industrial revenue bonds to LES and the current application.
6. Please provide documentation of the history of Urenco, including its subsidiaries and affiliates, in the management of enrichment and related facilities worldwide.
7. Please provide, without limitation, documentation of all investigations, indictments, complaints, or reports of investigations, done by regulatory agencies in any country or international regulatory agencies involving in any way the operation of nuclear fuel cycle facilities owned or operated by Urenco or any affiliate or subsidiary of Urenco.
8. Please provide, without limitation, documentation of all investigations, indictments, complaints, or reports of investigations, done by regulatory agencies in any country involving in any way any officer, executive, or employee of Urenco or any affiliate, subsidiary, or contractor working for Urenco, related to the misuse or loss of nuclear materials or technology.

9. Please provide documents concerning the role played by Urenco, its subsidiaries, affiliates, officers, executives, employees, or contractors in the provision of nuclear fuel cycle products or related technology or equipment, or plans for such technology or equipment to any personnel in violation of Urenco policies or rules with regard to information security.
10. Please provide documents concerning any proposed enrichment facilities anywhere (other than the Homer, LA facility) sponsored or proposed by Urenco or any of its subsidiaries, affiliates or partners that have been rejected by regulatory or other governmental authorities over the course of the last 10 years.
11. Please provide documents showing the causes of the closure of any nuclear fuel cycle facilities (including, but not limited to enrichment facilities) owned or operated by Urenco or any of its subsidiaries, affiliates or partners, that have been closed in the last ten years.
12. Please provide copies of every prospectus involving, in whole or in part, the financing of any nuclear fuel cycle facility being financed or refinanced by Urenco or any of its subsidiaries or partners over the last ten years.
13. Please provide documentation showing whether any third world countries (or major investors from any third world countries) including but not limited to Iran, Pakistan, Iraq, Saudi Arabia or North Korea, have significant investments in Urenco, its subsidiaries or affiliates, or its contractors on nuclear fuel cycle projects or investments.
14. Please provide documentation for each of the forecasts described in ER 1.1.2 (ER p.1.1-4). This documentation should include but not be limited to the data set

supporting the forecast, the calculation of the forecast (e.g. the regression analysis), the spreadsheet or other similar form for manipulating the data to arrive at the forecast with all the data contained in any such spreadsheet (including, e.g., formulas, other sheets containing data or references, etc.) as necessary to allow the replication of the forecast.

15. Please refer to ER p.1.1-5, paragraph beginning "In the U.S." Please provide all documents concerning the assertion presented in the first sentence of that paragraph with respect to the relicensing of US nuclear power plants.
16. Please refer to ER p. 1.1-18, top two lines. Please provide documents concerning the "forecast."
17. Please provide documentation of the current annual output levels of Urenco's European enrichment facilities, including but not limited to those at Gronau, Almelo, and Capenhurst.
18. Please refer to ER p.1.1-9, paragraph beginning "The existing USEC") Please provide documentation supporting LES' "estimates" with respect to the economics of USEC's Paducah plant. Please also provide, if not already provided, a copy of reference Sterba, 1999.
19. Please refer to ER p.1.1-11, paragraph beginning "The Russian HEU". Please provide all documents showing or tending to show that the US-Russian HEU agreement will not be renewed after the current agreement expires.
20. Please refer to ER p. 1.1-11. Please provide documentation of the claim that the renewal of the Russian HEU agreement is to be characterized as involving a "very high level of uncertainty."



21. Please refer to ER p. 1.1-11, last paragraph. Please provide documentation of the calculations involving the need to expend substantial SWUs to produce the blendstock.
22. Please refer to ER p.1.1-1, paragraph 1 ("The enriched uranium will be used primarily in . . ."). Please provide documentation showing the planned sales of the product of the proposed plant outside the United States as forecasted for each year of the plant's operating life.
23. Please refer, e.g., to ER p.1.1-21, Middle paragraph. Please provide documentation of the claim that there is a demand by U.S. nuclear utilities for a second producer located in the U.S. Please provide this documentation by utility.
24. Please refer to ER p.1.1-3 paragraph beginning "Notwithstanding . . .". Please provide documentation of the claim that the Urenco centrifuge technology uses "approximately 50 times less energy" than the gas diffusion technology currently in use in the U.S.
25. Please refer to ER p.1.1-3 paragraph beginning "Notwithstanding . . .". Please provide documentation showing the cost of the energy used by the GDP plant at Paducah compared to the cost of the energy to be used at the Lea County facility.
26. Please provide documentation showing the estimated cost of production of the Lea County facility relative to the estimated cost of production at the proposed USEC centrifuge facility at Portsmouth, Ohio, such costs to include the cost of disposing of each plant's waste products.
27. Please refer to ER p. 1.1-11. If LES does not agree that the US-Russian HEU agreement involves the provision of LEU that requires no further expenditures of

SWUs, please provide documentation of LES' position and the support for that position.

28. Please provide documentation showing where LES intends to procure the UF6 feedstock for the proposed plant including the identity of the source nation(s).
29. Please provide documentation of the claim that prices for enriched fuel will be lower for US utilities if the NM plant is built.
30. Please provide a copy of the EEI Enrichment Handbook, Report NFC-90-001, published by the Edison Electric Institute (Nov. 1990), and cited in the List of References in the ER (p. 9.0-7).

Respectfully submitted,



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September 9, 2004

## CERTIFICATE OF SERVICE

Pursuant to 10 CFR § 2.305 the undersigned attorney of record certifies that on September 9, 2004, the foregoing Interrogatories and Document Request on Behalf of Petitioners Nuclear Information and Resource Service and Public Citizen to Applicant Louisiana Energy Services, L.P. was served by electronic mail and by first class mail upon the following:

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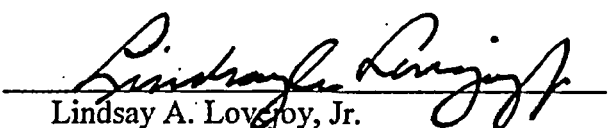
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