

June 8, 2001

Mr. Steven A. Toelle
Director, Nuclear Regulatory Affairs
United States Enrichment Corporation
5903 Rockledge Drive
Bethesda, MD 20817-1818

SUBJECT: INSTALLATION AND OPERATION OF A SILEX TEST LOOP AT A GASEOUS
DIFFUSION PLANT

Dear Mr. Toelle:

Your letter of March 8, 2001, requested a decision from the U.S. Nuclear Regulatory Commission (NRC) regarding the acceptability of installing and operating an alternative enrichment test loop at a gaseous diffusion plant (GDP) using the 10 CFR Part 76 certificate amendment process. Specifically, you mention that the United States Enrichment Corporation (USEC) is developing plans to assemble a test loop using the Separation of Isotopes by Laser Excitation (SILEX) technology that USEC believes can be installed and operated at a GDP under the regulatory framework of 10 CFR Part 76. Your letter also provides an approximate value for the area required by the test loop (6,000 square feet) and quantity of uranium (250 kg) associated with the test loop. Your letter also indicates USEC fully understands that the full-scale deployment of an alternative technology uranium enrichment facility, such as one based on SILEX, would require licensing under 10 CFR Part 70.

The NRC has considered and evaluated this request. We have come to the conclusion that a SILEX test loop at a GDP would require licensing under 10 CFR Part 70 and not under 10 CFR Part 76. Our reasoning is described below.

At the outset, we note that 10 CFR Part 76 is clearly entitled, "Certification of the Gaseous Diffusion Plants." Part 76 was established to implement the statutory requirement in Section 1701 of the Atomic Energy Act of 1954, as amended, to provide for the certification of the GDPs leased to USEC. The scope of Part 76 as described in Section 76.2 is limited to the operation of the GDPs. The statement of considerations for Part 76 was clear that the certificate was to be issued only for the gaseous diffusion operations. Thus, the intent of Part 76 is clearly to focus on those facilities at Paducah and Portsmouth that are associated with the gaseous diffusion process. Facilities and test facilities associated with other enrichment processes, such as gas centrifuges at Portsmouth, are not included in the documentation that supports Part 76 and the GDP certification.

Part 76 provides a mechanism to make changes to a GDP. However, the change provision in 10 CFR 76.68 is intended to address changes associated with gaseous diffusion operations. The SILEX laboratory will be a new laboratory, or a substantial modification of an existing laboratory, specifically designed to test the new SILEX technology for enrichment. It is more than simply making use of an unused portion of a laboratory, that is otherwise being predominantly used for supporting the gaseous diffusion operation [e.g., analyzing radioactive

samples for the Ohio Environmental Protection Agency]. The SILEX activity is a change to the GDP which is unrelated to gaseous diffusion operations. In fact, it will involve components unique to SILEX which you indicated would be plant-size or near plant-size to provide performance information. Such components are unrelated to the gaseous diffusion process. It is an alternate technology and, therefore, beyond the scope of Section 76.68 and Part 76. For the same reason, the amendment process described in 10 CFR 76.45 only covers new or modified activities that fit into the context of gaseous diffusion technology. Neither USEC's Safety Analysis Reports nor NRC's Compliance Evaluation Reports can be read as expanding the certificate envelope beyond the gaseous diffusion process.

In sum, the SILEX process, being an alternate technology for enrichment, is not covered by the certification process envisioned by Section 1701 of the Atomic Energy Act and 10 CFR Part 76 of the Commission's regulations. Accordingly, possession and use of special nuclear material in the SILEX process would require a 10 CFR Part 70 license. This is consistent with Section 1702 of the Atomic Energy Act which requires alternate technologies for enrichment to be licensed under 10 CFR Part 70.

Since our review indicates the SILEX laboratory (as described in the March 8, 2001, letter and our meeting of February 7th and 20th) would not be considered to be an "uranium enrichment facility" as defined in 10 CFR Part 70, the environmental report and formal hearing provisions for licensing a uranium enrichment facility [e.g., 10 CFR 51.97(c), 70.21(h), 70.23a, and 70.31(e)] required by Section 193 of the Atomic Energy Act are not applicable. This simplifies the review process for any application for a SILEX test loop.

Finally, your letter states that a predictable regulatory framework and licensing basis are needed for testing alternative uranium enrichment technologies such as SILEX. We believe that 10 CFR Part 70 represents a predictable regulatory framework and licensing basis for alternative technology enrichment processes and facilities. In developing an application, we would expect that many of the programs reviewed and approved by the NRC in the certificates for the Paducah and Portsmouth GDPs could be incorporated or referenced in any application under 10 CFR Part 70 to minimize any unnecessary regulatory burden and streamline the licensing process.

We would be pleased to meet with you to discuss the application of 10 CFR Part 70 to the SILEX process.

Sincerely,

/RA/

Joseph Giitter, Chief
Enrichment Section
Special Projects Branch
Division of Fuel Cycle Safety
and Safeguards, NMSS

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In sum, the SILEX process, being an alternate technology for enrichment, is not covered by the certification process envisioned by Section 1701 of the Atomic Energy Act and 10 CFR Part 76 of the Commission's regulations. Accordingly, possession and use of special nuclear material in the SILEX process would require a 10 CFR Part 70 license. This is consistent with Section 1702 of the Atomic Energy Act which requires alternate technologies for enrichment to be licensed under 10 CFR Part 70.

Since our review indicates the SILEX laboratory (as described in the March 8, 2001, letter and our meeting of February 7th and 20th) would not be considered to be an "uranium enrichment facility" as defined in 10 CFR Part 70, the environmental report and formal hearing provisions for licensing a uranium enrichment facility [e.g., 10 CFR 51.97(c), 70.21(h), 70.23a, and 70.31(e)] required by Section 193 of the Atomic Energy Act are not applicable. This simplifies the review process for any application for a SILEX test loop.

Finally, your letter states that a predictable regulatory framework and licensing basis are needed for testing alternative uranium enrichment technologies such as SILEX. We believe that 10 CFR Part 70 represents a predictable regulatory framework and licensing basis for alternative technology enrichment processes and facilities. In developing an application, we would expect that many of the programs reviewed and approved by the NRC in the certificates for the Paducah and Portsmouth GDPs could be incorporated or referenced in any application under 10 CFR Part 70 to minimize any unnecessary regulatory burden and streamline the licensing process.

We would be pleased to meet with you to discuss the application of 10 CFR Part 70 to the SILEX process.

Sincerely,

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Joseph Giitter, Chief
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Division of Fuel Cycle Safety
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