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Global Laser Enrichment Facility Licensing

Global Laser Enrichment, LLC (GLE), is an NRC licensee under Docket 70-7016 and license SNM-2019. The Separation of Isotopes by Laser Excitation (SILEX) laser uranium enrichment technology is owned by the Australian company, SILEX Systems Limited (SLX), which is seeking to commercialize the technology in the United States through GLE. The parent investors for GLE include General Electric (GE) (51%), Hitachi (25%), and CAMCO (24%). In April 2016, GE and Hitachi (GEH) announced their desire to exit GLE, due to changes in business priorities and the existing difficult market conditions. SLX is actively seeking investors to purchase the GEH portion of GLE.

GLE currently has exclusive rights to use the SILEX laser separation process to enrich natural UF₆ gas in the uranium-235 isotope. GLE is proceeding with the project in multiple phases: 1) Test Loop operations; 2) a license for a commercial-scale enrichment plant in Wilmington, NC; and 3) agreement with the Department of Energy (DOE) to purchase high assay uranium tails for re-enrichment at a proposed Paducah Laser Enrichment Facility (PLEF), in Paducah, Kentucky.

For phase one, the Test Loop was built at GEH's nuclear fuel fabrication facility in Wilmington, North Carolina. This facility is being used to advance the performance and reliability of the process and equipment to be used for commercial laser enrichment. The Test Loop is licensed under the Global Nuclear Fuels – America fuel fabrication license (SNM-1097). For phase two, GLE submitted a license application in June 2009 for a commercial-scale plant enrichment plant in Wilmington, North Carolina. On September 25, 2012, NRC staff issued a construction and operating license for the facility. Due in part to the forecasted pressure on the price of uranium and the pending transfer of ownership, GLE has placed development of the commercial enrichment facility on hold. For the third phase, GLE is considering submittal to the NRC a license application to build and operate the PLEF facility in Paducah, KY. In November 2016, the US DOE and GLE signed a 40-year agreement for the sale and purchase of depleted uranium hexafluoride (DUF₆). The agreement, which facilitates the sale of approximately 300,000 Metric Ton Units (MTU) of 'high assay' DUF₆ to GLE, supports the potential construction of a SILEX laser enrichment facility to re-enrich the tails inventory to natural uranium for commercial resale.

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Regulation and Legislation

In 1990, Congress passed the Solar, Wind, Waste, and Geothermal Power Production Incentives Act. Among other things, this legislation amended the Atomic Energy Act of 1954 to require licensing of uranium enrichment facilities under U.S. Nuclear Regulatory Commission (NRC) regulations in 10 CFR Parts 40 and 70. The act also stated that the construction and operation of a uranium enrichment facility is considered a major Federal action significantly affecting the quality of the human environment for the purposes of the National Environmental Policy Act (NEPA) of 1969. Therefore, an Environmental Impact Statement (EIS) needs to be prepared for this type of facility. Under the legislation, an adjudicatory hearing on the licensing of the construction and operation is required. This hearing must be completed before issuance of a license. The act also requires the applicant to obtain public liability insurance for the facility and requires the NRC to inspect the facility before operations begin to ensure that the plant is constructed to meet the license requirements.

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Licensing

In July 2007, GEH submitted a license amendment request to the NRC for research and development associated with laser enrichment to be conducted at their Wilmington, NC, Global Nuclear Fuels-Americas, LLC, facility. On May 12, 2008, NRC approved the amendment. GLE has constructed the Test Loop for making refinements to the SILEX laser isotope separation process.

On June 26, 2009, GLE submitted a license application for a full-scale commercial facility. The full-scale commercial facility was subject to a mandatory hearing. NRC staff reviewed the application, developed a Safety Evaluation Report (SER) – NUREG-2120 and issued a construction and operating license (SNM-2019) on September 25, 2012.

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Environmental Impact Statement

On January 30, 2009, GE submitted an Environmental Report (ER) for the proposed commercial facility. The ER provided the applicant's assessment of the environmental impacts of the proposed commercial facility. The NRC prepared its own assessment in an Environmental Impact Statement (EIS). The EIS was developed in accordance with the National Environmental Policy Act (NEPA) and NRC regulations at 10 CFR Part 51. On February 28, 2012, the NRC Staff issued the Final EIS (NUREG-1938), Volume 1 and Volume 2.

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Correspondence and Licensing Information

Date	Description
09/25/2012	Issuance of License
08/20/2012	Revision 7 to License Application
02/28/2012	Issuance of Final Environmental Impact Statement

- Volume 1 - Final Report
- Volume 2 - Final Report Appendices

02/28/2012 Issuance of Safety Evaluation Report

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Public Involvement

Meeting Schedule

For upcoming meetings, see our Public Meeting Schedule. Information for the meetings on this page are available at this Web site or in ADAMS if an accession number is given.

Meeting Archive

Meetings and Other Interactions Between GE and NRC

Meeting Date	Subject
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None	At this time.
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Project Schedule

GLE plans to continue limited operations of the Test Loop facility in the near term. Future operations of the Test Loop, construction of a commercial laser enrichment facility in Wilmington, NC., and submittal of a new license application for the proposed PLEF facility are subject to the transfer of ownership. The transfer will require resolution of a number of issues including financial assurance, decommissioning funding, mitigation of foreign ownership and influence, and potential treaty implications between Australia, the United States, and other countries that become involved due to potential new owners.

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