

# Laser Uranium Enrichment Undermines US Nuclear Non-Proliferation Efforts

WASHINGTON - October 8 - Experts last week warned that a proposed uranium enrichment nuclear facility in Wilmington, NC would undermine U.S. efforts to prevent the spread of nuclear weapons and materials in other countries.

In a letter to the U.S. Nuclear Regulatory Commission, the experts noted that the planned Global Laser Enrichment Commercial Facility would complicate diplomatic efforts to discourage the use of this technology in other countries. They explained that, "**Should the United States be seen to embrace the use of laser isotope enrichment as a commercially viable technology, there can be little question that other states will be strongly encouraged to follow this lead and develop such technology for their own use.**" and that, "**Given the great difficulty of detecting laser isotope enrichment facilities, their spread could undermine U.S. nonproliferation efforts and the ability of the International Atomic Energy Agency to confirm the absence of undeclared nuclear activities in nuclear Nonproliferation Treaty (NPT) non-nuclear-weapon states.**"

The U.S. Nuclear Regulatory Commission is considering a license request by General Electric-Hitachi for its planned Global Laser Enrichment Commercial Facility.

Laser technology would be used as an alternative to centrifuge or gaseous diffusion to enrich uranium for nuclear fuel. The use of this uranium enrichment technology could detract from U.S. and international security efforts to detect and monitor nuclear programs worldwide as global interest in nuclear power grows. If enriched to a concentration of 20% uranium 235 or higher, enriched uranium can be used to make nuclear weapons.

A covert enrichment facility using laser technology would be harder to detect because it would use less energy and be of smaller size, and thereby be easier to hide.

A laser uranium research program in Iran escaped detection in 2002. Another laser enrichment research experiment was also detected in South Korea in 2004 after several years. The discovery of undeclared centrifuges enrichment facilities in Iran, at Natanz in 2002 and more recently at Qom, underscore the importance of being able to detect covert facilities that could be used to make nuclear weapons-usable material.

The full text of the letter is below and available online. The attachments referred to in the letter are "Nuclear Power, Disarmament and Technological Restraint" by James Acton, *Survival*, Vol 51 No. 4, August-September 2009, pp.101-126, and "Laser Enrichment: Separation Anxiety," by Jack Boureston and Charles D. Ferguson, *Bulletin of the Atomic Scientists*, vol. 61, no. 2, March- April 2005, pp. 14-18, available online\*\*  
September 30, 2009

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Nuclear Regulatory Commission

Washington, DC

Dear Members of the Commission:

We believe the potential demonstration effect on other states from licensing the General Electric-Hitachi Global Laser Enrichment Commercial Facility (Docket No. 70-7016) in Wilmington, North Carolina raises significant proliferation issues. Should the United States be seen to embrace the use of laser isotope enrichment as a commercially viable technology, there can be little question that other states will be strongly encouraged to follow this lead and develop such technology for their own use. Given the great difficulty of detecting laser isotope enrichment facilities, their spread could undermine U.S. nonproliferation efforts and the ability of the International Atomic Energy Agency to confirm the absence of undeclared nuclear activities in nuclear Nonproliferation Treaty (NPT) non-nuclear-weapon states. The rationale for such concerns is set forth in greater detail in the attached articles by two of the signers

Accordingly, we request (1) that the Commission makes the potential of this facility to contribute to the spread of laser isotope enrichment technology-and thus to the increased risk of nuclear proliferation-an explicit factor in its decision, and (2) that the Commission prepare a Programmatic Environmental Impact Statement on the licensing of laser isotope separation facilities that includes specific consideration of the demonstration effect of such U.S. action on international proliferation risks.\*\*

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\*\*The letter, with signatures, can be found at [cfr.org/content/thinktank/Ferguson\\_BAS\\_separation.pdf](http://cfr.org/content/thinktank/Ferguson_BAS_separation.pdf)