Princeton University **Plasma Physics Laboratory**
James Forrestal Campus
P.O. Box 451, Princeton, New Jersey 08543

June 8, 2009

Jeffrey Makiel, Federal Project Director
National Spherical Torus Experiment Upgrade Project
United States Department of Energy
Princeton Site Office
Princeton Plasma Physics Laboratory
Post Office Box 102
Princeton, New Jersey 08542

Re: Security Vulnerability Assessment
National Spherical Torus Experiment (NSTX) Upgrade Project
Princeton Plasma Physics Laboratory (PPPL), D-Site

Dear Mr. Makiel:

This letter is in response to your letter to me, dated May 7, 2009, regarding the referenced matter.

Pursuant to the requirement by the United States Department of Energy (DOE) Order 413.3A, a physical security vulnerability assessment of the NSTX Upgrade Project was conducted to determine if any negative impact and associated cost increases to the safeguards and security program would occur as a result of the upgrades. It is understood that the upgrades will involve the Center-Stack (CS) and Neutral Beam Injector (NBI).

As outlined in the requirements of DOE Manual 470.4-1, the assessment did not indicate any negative impact or increased cost to the physical protection, personnel security, emergency operations or protective forces. The Design Basis Threat (DBT) was included in this assessment.

Thank you for your interest in this matter.

Sincerely,

C. Craig Samtmann
Head, Site Protection Division

Concur: Michael D. Williams
Associate Director for Engineering

cc: Erik D. Perry, PPPL
Masayuki Ono, PPPL
Raymond M. Kimble, Lead Contract Specialist, DOE-PSO
Kim E. Tafe, Contract Specialist, DOE-PSO

Department of Energy
Princeton Site Office
P.O. Box 102
Princeton, New Jersey 08542

May 7, 2009

C. Craig Samtmann, PPPL

SUBJECT: SECURITY VUNERABILITY ASSESSMENT FOR THE NATIONAL SPHERICAL TORUS EXPERIMENT (NSTX) UPGRADE PROJECT

Major upgrades are being planned for the National Spherical Torus Experiment (NSTX) to explore new physics regimes and to enhance the understanding of toroidal confinement physics. A major item of equipment (MIE) project was approved last February which has authorized PPPL to proceed to critical decision 1 (CD-1): develop an alternative analysis and cost range. As part of the CD-1 approval requirement as per DOE Order 413.3A, PPPL must assess the impact, if any, that the newly proposed upgrades may have regarding physical security vulnerability at PPPL.

The following is a brief description of planned work for the NSTX Upgrade Project:

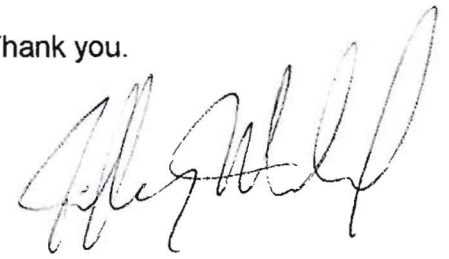
1. Upgrade the center stack assembly as to provide a higher magnetic field. This work entails the removal of the existing center stack and fabricates and installs a new larger center stack assembly;
2. Install a second neutral beam injector (NBI) to increase heating and current drive. This work entails the refurbishment of an existing NBI from the TFTR experiment and installs it on the NSTX device;
3. The work also includes the modification of existing supporting services (power, cooling, controls, etc.).

Other features of the NSTX Upgrade Project include:

- Predominantly all installation work, except for some modification to existing support systems, will be within the existing confines of the NSTX Test Cell;
- It is anticipated that the upgrades will not modify NSTX's nuclear category status of 'below Category 3'. However, further analysis will be performed by others to validate this assumption;
- The NSTX Upgrade Project will have a project completion date range of 2013 to 2014 upon which NSTX research operations will commence again.

I hereby request your assistance to assess any impact or change that the NSTX Upgrade Project may have regarding PPPL's physical security vulnerability. I request your response by June 30, 2009. If you need further information, please feel free to contact me at extension x3721.

Thank you.



Jeffrey Makiel
Federal Project Director for NSTX Upgrades
Princeton Site Office

cc: E. Perry, PPPL
M. Ono, PPPL
M. Williams, PPPL
R. Kimble, PSO
K. Tafe, PSO