

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:

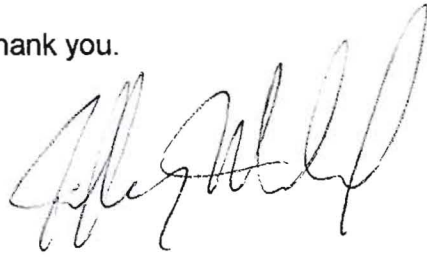
1. Upgrade the center stack assembly as to provide a higher magnetic field. This work entails the removal of the existing center stack and fabricates and installs a new larger center stack assembly;
2. Install a second neutral beam injector (NBI) to increase heating and current drive. This work entails 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.

A handwritten signature in black ink, appearing to read "Jeffrey Makiel". The signature is fluid and cursive, with a large initial "J" and "M".

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