

ENVIRONMENTAL EVALUATION NOTIFICATION FORM

Grantee/Contractor Laboratory: Princeton University/Princeton Plasma Physics Laboratory (PPPL)
 Project/Activity Title: Plasma Based Nanotechnology Research & Development Laboratory
 NEPA Tracking No.: _____ Type of Funding SC
 B&R Code: _____ Total Estimated Cost: \$500,000

DOE Cognizant Secretarial Officer (CSO): William F. Brinkman

Contractor Project Manager: _____ Signature: _____
 Date: _____

Contractor NEPA Reviewer: Jerry D. Levine Signature: 
 Date: 5/28/10

I. **Description of Proposed Action:** The proposed action would consist of the establishment of a PPPL Laboratory for Plasma Based Nanotechnologies to explore the plasma science associated with nanotechnology processes, including understanding of plasma-nanoparticle interactions and transport, development of in-situ plasma diagnostics and controlling nanoparticle synthesis by plasma manipulation. This new laboratory would have four objectives: 1) to study basic plasma science associated with interactions between plasmas and nanoparticles; 2) to develop control of these interactions with application to plasma based production of nanomaterials; 3) to explore a range of nanomaterials for various plasma applications; and 4) to set the stage for providing user facility collaborations with external groups investigating plasma based nanotechnologies. All work associated with nanoparticles would comply with the relevant requirements of the Contractor Requirements Document (CRD) portion of DOE N456.1, "The Safe Handling of Unbound Engineered Nanoparticles". The new laboratory would employ a fume hood with a HEPA filter exhaust system configured to a roof mounted exhaust point. Prior to initiating experiments in this new laboratory, approval would be sought from the Manager, Princeton Site Office (PSO), following review by a combined safety review committee consisting of PPPL and PSO members.

II. **Description of Affected Environment:** Work would take place in Rooms L-141/143 of the existing Lab Building at C-Site (see attached map and figure). No environmentally sensitive resources would be affected.

III. **Potential Environmental Effects:** (Attach explanation for each "yes" response, and "no" responses if additional information is available and could be significant in the decision making process.)

A. Sensitive Resources: Will the proposed action result in changes and/or disturbances to any of the following resources?

	<u>Yes/No</u>
1. Threatened/Endangered Species and/or Critical Habitats	1. No
2. Other Protected Species (e.g. Burros, Migratory Birds)	2. No
3. Wetlands	3. No
4. Archaeological/Historic Resources	4. No
5. Prime, Unique or Important Farmland	5. No
6. Non-Attainment Areas	6. No
7. Class I Air Quality Control Region	7. No
8. Special Sources of Groundwater (e.g. Sole Source Aquifer)	8. No
9. Navigable Air Space	9. No
10. Coastal Zones	10. No
11. Areas w/Special National Designation (e.g. National Forests, Parks, Trails)	11. No
12. Floodplain	12. No

B. Regulated Substances/Activities: Will the proposed action involve any of the following regulated substances or activities?

	<u>Yes/No</u>
13. Clearing or Excavation (indicate if greater than 5 acres)	13. No
14. Dredge or Fill (under Clean Water Act section 404; indicate if greater than 10 acres)	14. No
15. Noise (in excess of regulations)	15. No
16. Asbestos Removal	16. No
17. PCBs	17. No
18. Import, Manufacture or Processing of Toxic Substances	18. No
19. Chemical Storage/Use <i>Small amounts of carbon and other materials would be used in nanotechnology experiments.</i>	19. Yes
20. Pesticide Use	20. No
21. Hazardous, Toxic, or Criteria Pollutant Air Emissions	21. No
22. Liquid Effluent	22. No
23. Underground Injection	23. No
24. Hazardous Waste <i>A small amount of nanoparticles would be produced, which would be treated and disposed of as hazardous waste, packaged and handled according to 40 CFR 261. Packages would be labeled to indicate the presence of nanomaterials. The waste management requirements of the Contractor Requirements Document (CRD) portion of DOE N456.1 would also be followed.</i>	24. Yes
25. Underground Storage Tanks	25. No
26. Radioactive (AEA) Mixed Waste	26. No
27. Radioactive Waste	27. No
28. Radiation Exposures	28. No

C. Other Relevant Disclosures. Will the proposed action involve the following?

	<u>Yes/No</u>
29. A threatened violation of ES&H regulations/permit requirements <i>The requirements of the PPPL ES&H Manual (Section 8/Chapter 1/Subchapter 1.12 on Nanoparticles) and DOE N456.1 would be followed.</i>	29. No
30. Siting/Construction/Major Modification of Waste Recovery, or TSD Facilities	30. No
31. Disturbance of Pre-existing Contamination	31. No
32. New or Modified Federal/State Permits <i>The need to obtain an air permit from the NJDEP will be evaluated, and a permit obtained if required.</i>	32. Yes
33. Public controversy	33. No
34. Action/involvement of Another Federal Agency (e.g. license, funding, approval)	34. No
35. Action of a State Agency in a State with NEPA-type law. (Does the State Environmental Quality Review Act Apply?)	35. No
36. Public Utilities/Services	36. No
37. Depletion of a Non-Renewable Resource	37. No

IV. **Section D Determination:** Is the project/activity appropriate for a determination under Subpart D of the DOE NEPA Regulations for compliance with NEPA?

Yes

DOE-PSO NEPA Compliance Officer (NCO) Review:

Concurrence with Proposed Class of Action Recommended

CX

EA

EIS

Category B3.6 Siting/construction/operation/decommissioning of facilities for bench-scale research, conventional laboratory operations, small-scale research and development and pilot projects.

For Categorical Exclusions (CXs):

A. The proposed action fits within a class of actions that is listed in Appendix A or B to Subpart D.

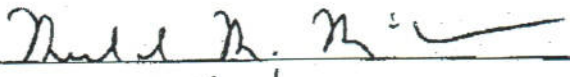
For classes of actions listed in Appendix B, the following conditions are integral elements; i.e., to fit within a class, the proposal must not:

- 1) Threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, including DOE and/or Executive Orders;
- 2) Require siting, construction, or major expansion of waste storage, disposal, recovery, or treatment facilities, but may include such categorically excluded facilities;
- 3) Disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that pre-exist in the environment such that there would be uncontrolled or unpermitted releases; or
- 4) Adversely affect environmentally sensitive resources.

B. There are no extraordinary circumstances related to the proposal that may affect the significance of the environmental effects of the proposal; and

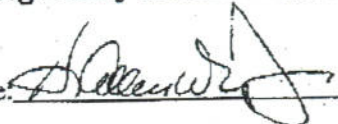
C. The proposal is not "connected" to other actions with potentially significant impacts, is not related to other proposed actions with cumulatively significant impacts, and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211.

V. DOE Recommendation Approval:

SC GLD: Michael M. McCann Signature: 
Attorney-Advisor Date: 6/3/10

VI. NEPA Compliance Officer Subpart D CX Determination and Approval:

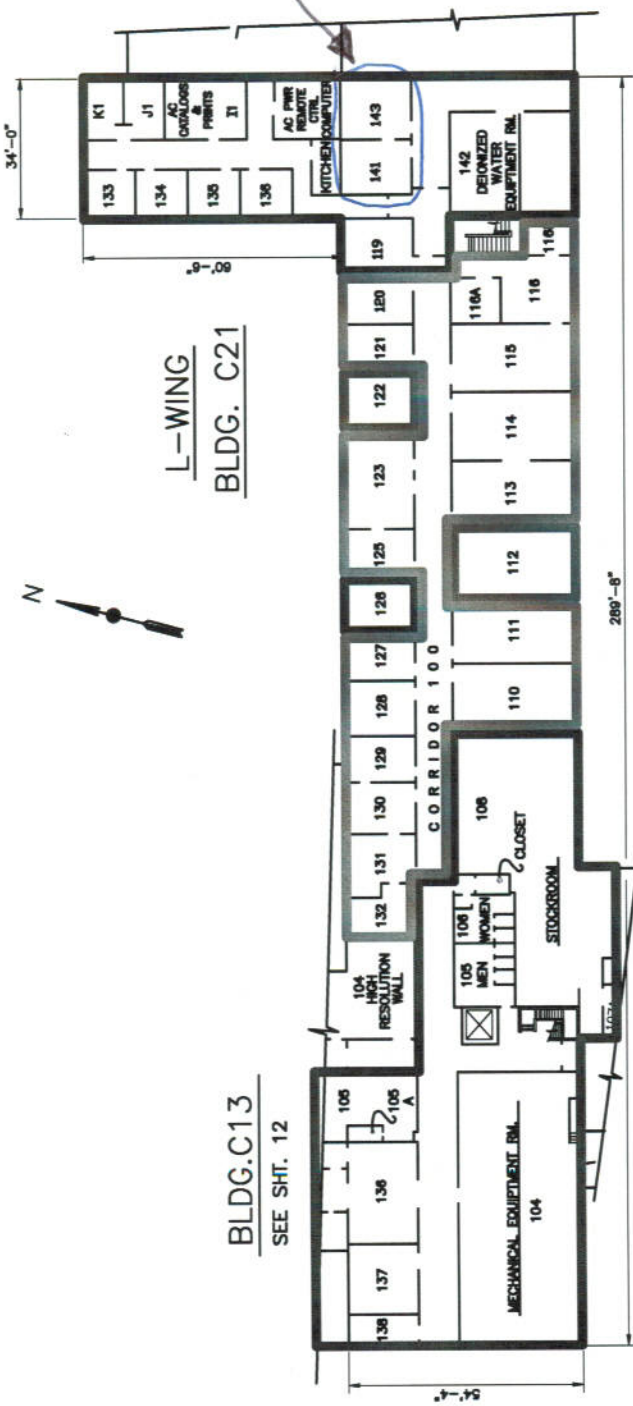
Based on my review of information conveyed to me and in my possession (or attached) concerning the proposed action, as NEPA Compliance Officer, I have determined that the proposed action fits within the specified class of actions, the other regulatory requirements set forth above are met, and the proposed action is hereby categorically excluded from further NEPA review.

PSO NCO: H. Allen Wrigley Signature: 
Date: 06/03/2010

NO.	DATE	REVISION	BY	CH	APPROVED

Proposed Location of new Plasma Based Nanotechnology Research & Development Laboratory

P. EFTHIMION
J. HOSEA
M. WILLIAMS



NOTE: NAMES REPRESENTS PERSON RESPONSIBLE FOR SPACE ALLOCATION.

PRINCETON PLASMA PHYSICS LABORATORY	
C & D SITES	
BUILDING SPACE PLANNING	
LABORATORY BUILDING	
1ST. FLOOR & L-WING	
DR. F. E. D.	LOCAL CAD NO. DWE 7/14/08
DR. E. JENKINS	1BAD3014.DWG B-SP300
DR. J. NELSON	APPROVALS
DR. J. SIEGEL	E.J. J.S.
SHEET NO. 14	

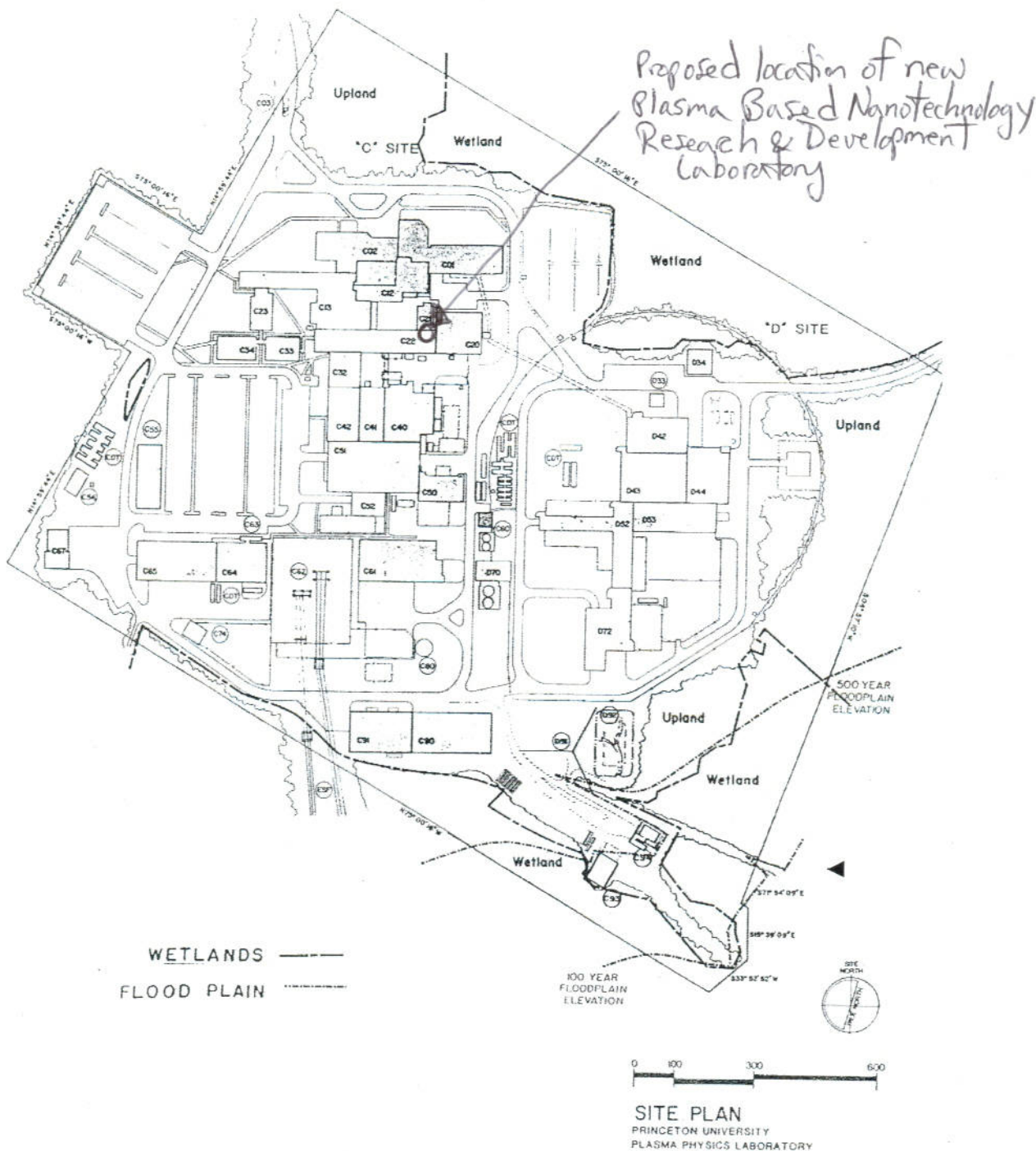
LABORATORY BLDG.
BLDG. C22

	GSF	NSF
LAB BLDG.	16,610	10,017
L-WING	2,160	1,298
TOTAL	18,770	11,315

BLDG. C32
SEE SHT. 17

BLDG. C13
SEE SHT. 12

L-WING
BLDG. C21



PPPL Site Map – Floodplain and Wetlands Boundaries

Printed copies of this document are considered UNCONTROLLED / Information Only copies. The official document is at http://www.pppl.gov/eshis/PPPL_docs.shtml The Best Practices and Outreach Department maintains the signed original.