

PROCEDURE COVER SHEET

**Princeton Plasma Physics Laboratory
Procedure**

Procedure Title:
Incoming Research Collaboration

Number D-NSTX-OP-AD-26	Revision: 1	Effective Date: August 31, 2007 <i>Supersedes Rev 0 Dated April 5, 2005</i> Expiration Date: (2 yr. unless otherwise stipulated)
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Procedure Approvals

Author: Thomas Egebo/Jonathan E. Menard <i>Thomas Egebo</i>	Date 10/22/07
ATI: Jonathan E. Menard <i>Jon Menard</i>	Date 10/22/07
RLM: Rich Hawryluk <i>RJ Hawryluk</i>	Date 10/29/07

Responsible Division:
NSTX Department

Procedure Requirements
designated by RLM

LABWIDE:

Work Planning Form # _____ (ENG-032)	Lockout/Tagout (ESH-016)
Confined Space Permit (5008, Sec. 8, Chap 5)	Lift Procedure (ENG-021)
Master Equip. List Mod (GEN-005)	ES&H Review (NEPA, IH, etc.)
RWP (HP-OP-20)	Independent Review
ATI Walkdown	Pre-job Brief
Post-job Brief	Hazard Analysis

D-SITE SPECIFIC:

D-Site Work Permit (OP-AD-09)	Door Permit (OP-G-93)
Tritium Work Permit (OP-AD-49)	USQD (OP-AD-63)
Pre-job brief (OP-AD-79)	T-MOD (OP-AD-03)
** DCA/DCN (OP-AD-104) # _____	

** OP-AD-104 was voided by procedure ENG-032. However, DCAs that were open at the time of adoption of ENG-032 are still considered valid for work approval purposes.

REVIEWERS (designated by RLM)
Accountable Technical Individual
Test Director
Independent Reviewer
D-Site Shift Supervisor
NSTX
D-Site Caretaking
Vacuum
Computer
Tritium
Quality Assurance/Quality Control
AC Power
Maintenance and Operations Division
Energy Conversion Systems
Engineering
Environmental Restoration & Waste Management Division
Water Systems
Neutral Beam (Heating Systems Branch of Electrical Engineering)
Radiofrequency (Heating Systems Branch of Electrical Engineering)
Diagnostics
Environmental, Safety, & Health

TRAINING (designated by RLM)			
No training required _____		Instructor _____	
Personnel (group, job title or individual name)	Read Only*	Instruction	Hands-On
Training Rep. _____			
RLM _____			

* "Read Only" training for Administrative, Alarm Response, and Emergency Operations procedures must be documented on a Record of Training form (attachment 6). The completed Run Copy will serve as the documentation of "Read Only" training for all other types of procedure

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Applicability

This procedure is applicable to all Groups and Researchers who participate in collaborative research on the National Spherical Torus Experiment (NSTX).

Introduction

NSTX is a major U.S. national fusion research facility built at PPPL in the late 1990's to advance the frontiers of fusion energy sciences, taking advantage of the highly complementary and unique scientific opportunities offered by the low aspect ratio of a spherical torus. A national team composed of collaborating researchers from universities, national laboratories, and industry, directly funded by DOE, carry out the NSTX research program. Substantial cooperative research is also carried out by researchers from U.S. and world who are not supported by DOE funding dedicated to the NSTX national research collaboration. The NSTX collaborating research team incoming to PPPL has as a result grown to become an important, integral, and strongly contributing part of the NSTX research effort. A procedure is therefore established to provide basic guidelines to enhance the effectiveness of this collaborative research.

This procedure is arranged in the following sections:

- A. Applying for or Renewing NSTX Collaboration Research Funding**
- B. Collaboration Preparation**
- C. Collaboration Implementation.**

Reference Documents

GEN-008 Coordination of Visits, Assignments and Collaborations at PPPL

Documents for this procedure are available at:

http://nstx.pppl.gov/Pages_folder/program_folder/collaborations.html

PPPL Computer Systems Access Requirements are described at:

http://csd.pppl.gov/Procedures/User%20Responsibility_policy%20102006.pdf

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Procedure

A. Applying for or Renewing NSTX Collaboration Research Funding

If prospective groups or researchers seek DOE funding to collaborate on NSTX research, they must complete Section A. If groups or researchers already received DOE funding to collaborate on NSTX research, or do not require DOE funding dedicated to NSTX research collaboration, proceed to Section B.

<u>Responsibility</u>	<u>Action</u>
Applicant (Prospective Participant) of NSTX Research Collaboration	1. Informs the NSTX Program of decision to apply to DOE for NSTX collaboration funding.
NSTX Program Director	2. Assigns an NSTX Research Contact to discuss prospective collaboration research and requirements, and informs Contact of full responsibility.
NSTX Research Contact	3. Work with the Applicant to develop a Record of Discussion (Attachment 1), which records the proposed collaborative research roles of the Applicant and the NSTX Team.
Applicant and NSTX Research Contact	4. Submit the Record of Discussion for review by the NSTX incoming collaboration Manager and approval by the NSTX Program Director and the NSTX Project Director.
NSTX Program Director	5. Reviews the Record of Discussion and signs it to indicate approval, or indicates why the Record of Discussions was not approved, and informs the Applicant and the NSTX Research Contact.
Applicant of NSTX Research Collaboration	6. Includes the approved Record of Discussion in a NSTX Collaboration Research Funding Application and submits the application to DOE.
DOE Office of Fusion Energy Sciences (OFES) NSTX Manager	7. Informs applicant of funding decision, and NSTX Program Director of approved DOE-funded NSTX collaboration and researcher(s).

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B. NSTX Collaboration Preparation

Responsibility

Action

- | | |
|--|---|
| Participant of NSTX Research Collaboration | 1. Informs the NSTX Program Director of scope and schedule of planned collaboration on NSTX. |
| NSTX Program Director | 2. Assigns an NSTX Research Contact to collaborating Participant of NSTX Research, if none was assigned, and informs Contact of full responsibility. In general, the Research Contact will serve as the PPPL Host. If Research Contact can not serve as PPPL Host to the collaborating researcher, one will be assigned with concurrence of the NSTX Project Director. |
| NSTX Research Contact and Participant | 3. Prepare, if none was prepared, Record of Discussion (Attachment 1) and submit for review by the NSTX incoming collaboration Manager and approval by the NSTX Program Director and the NSTX Project Director. |
| Participant of NSTX Research Collaboration | 4. Signs NSTX Data Usage and Publication Agreement (Attachment 2). |
| PPPL Host | 5. Ensures that the collaborating researcher complies with requirements of PPPL procedure GEN-008 "Coordination of Visits, Assignments and Collaborations at PPPL," adheres to applicable NSTX procedures, PPPL policies, other PPPL procedures, and PPPL computer access requirements, when the collaborating researcher visits PPPL to carry out NSTX research collaboration.

[This will include completing an "Authorization Form For Domestic Visitors form," an "Unclassified Foreign National Visit/Assignment Form," or a "Model Visitor Agreement," as applicable. The PPPL Host's responsibilities include oversight on safety issues for the collaborator and providing the collaborator with training required to safely and effectively conduct their research program in accordance with PPPL policies and procedures.] |
| NSTX Program Director | 6. Consults with the NSTX Project Director and determines if a Record of Agreement (Attachment 3) will be required and informs the Collaborating Researcher and the NSTX Research Contact. The determination will be based on level of potential impact of the collaboration activities on the NSTX Program and Project. |

If a Record of Agreement is not required, proceed to Section C, Step 5.

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C. NSTX Collaboration Implementation

Responsibility

Action

- | | |
|--|---|
| NSTX Research Contact and Participant | <ol style="list-style-type: none">1. Develop a Record of Agreement based on the scope of work and the NSTX Program and Project Plans.2. Submit the Record of Agreement for review by the NSTX incoming collaboration Manager and approval by the NSTX Program Director and the NSTX Project Director. |
| NSTX Program Director | <ol style="list-style-type: none">3. Carries out a periodic review with the Collaborating Researcher and the NSTX Research Contact of collaboration progress and status in accordance with the approved Record of Agreement.
[The review is conducted at up to a quarterly rate for DOE-funded research]4. Updates the Record of Agreement in consultation with the NSTX incoming collaboration Manager and NSTX Project Director. |
| Participant of NSTX Research Collaboration and NSTX Research Contact | <ol style="list-style-type: none">5. Conducts and completes collaborative research in accordance with agreements and applicable NSTX procedures, as well as all relevant PPPL and DOE policies, procedures, guidelines, and regulations, for the duration of this task. |

D. Record Keeping

The records resulting from this procedure will be kept by the PPPL Operations Center, with a copy kept by the NSTX Planning and Control Officer.

Attachments:

1. Record of Discussion
2. NSTX Data Usage and Publication Agreement
3. Record of Agreement
4. Procedure Flowchart

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Attachment 1

Record of Discussion for NSTX Research Proposals

Key results of discussion between prospective NSTX collaborators and an NSTX Research Contact in support of NSTX collaboration proposals submitted to DOE.

A completed and signed record of discussion must be included with collaboration proposals to DOE

Please send completed and signed forms to Martin Peng (pengym@ornl.gov) and Jonathan Menard (jmenard@pppl.gov)

Questions or comments regarding processing this form should be forwarded to Thomas Egebo (tegebo@pppl.gov). The NSTX Project Fax Number is (609) 243-2222

<u>Title of Research Activities:</u>		<u>Collaboration began (mm/yy) or New:</u>
<u>Off-Site Institution:</u>		<u>Discussion Dates</u> <u>Initiated on:</u> <u>Completed on:</u>
<u>Collaboration Principal Researcher:</u> <u>Name:</u> <u>Email:</u> <u>Tel:</u> <u>Signature:</u> <u>& Date:</u>	<u>On-Site Research Contact:</u> <u>Name:</u> <u>Email:</u> <u>Tel:</u> <u>Signature:</u> <u>& Date:</u>	
<u>Research Goals:</u>		
<u>Off-Site Research Tasks:</u> 1) 2) etc.		
<u>On-Site Research Support Tasks:</u> 1) 2) etc.		
<u>Estimated Researcher Effort Required (Man-Months):</u>		

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On-Site Engineering Support Tasks:

1)

2)

etc.

Engineering Effort Required (Man-Months):

Estimated Hardware Cost Required (\$k):

Collaboration Researcher Questions and Issues:

1)

2)

etc.

Responses by On-Site Research Contact and Task Manager:

1)

2)

etc.

Additional Collaboration Researcher's Comments (if any):

1)

2)

etc.

Additional On-Site Research Contact and Task Manager Comments (if any):

1)

2)

etc.

Review and Comment:

NSTX Program Director

NSTX Project Director, Concurrence

Signature

Date

Signature

Date

Attachment 2

NSTX Data Usage and Publication Agreement

NSTX Research is carried out by a multi-institutional collaborative Research Team. All Research Team members are offered full access to NSTX data as it is collected and analyzed. This privilege entails responsibility by the Research Team members, both on-site and off-site, to ensure that the data are used properly, interpreted correctly, and that appropriate credit is given for the provided measurements, systems operations, and analyses.

The undersigned member of the NSTX Research Team agrees to adhere to the following guidelines of the NSTX data usage and results publication.

- 1) No Research Team member will be given direct access to unpublished NSTX data until this agreement has been signed by the Research Team member, and submitted to the NSTX Head of Physics Analysis
- 2) It will be the responsibility of the diagnostic physicists to produce calibrated and validated data in a timely fashion. Such data result from reducing the measured raw signals to a form that can be used for analysis in support of an ongoing experiment or for subsequent analysis, and then validating and releasing by the responsible diagnostic physicist for such use. This data will hereafter be referred to as "validated reduced data".
- 3) Validated reduced data will be available to the entire NSTX group for physics analysis of any type (data analysis, modeling, and theory), pursuant to Item 1. There will be no restriction on any individual, or group of individuals, from performing physics analysis that uses validated reduced data either "between-shots" (in support of the ongoing experiment) or "off-line".
- 4) Similar to the guidelines for validated reduced data, and pursuant to Item 1, the results of the physics analysis will be available to the entire NSTX Research Team. The results of the high-level analysis (between-shots or off-line modeling) are to be validated in a timely fashion, and can be used without restriction to support the physics analysis of any research team member.
- 5) It is expected that the physicist responsible for the first results from his/her efforts will produce the initial paper on these results as first author. "Efforts" includes diagnostic measurements, subsystems, experiments, analysis, etc. In later papers, if one is actively involved in the analysis of data, that person would be in the first alphabetical group of authors after the first author. In general, authorship priorities are:
 - a) First author – person who leads the effort and writes the paper.
 - b) First alphabetical group of authors after the first author – persons who have actively contributed to the work through experiment, analysis, writing, etc.
 - c) Second alphabetical group of authors – other persons whose work in data acquisition, operations, analysis, etc. has been used in the paper.

Attachment 2

6) The Head of Physics Analysis shall oversee the process to review and approve the content and authorship of papers and presentations utilizing NSTX data, in coordination with the NSTX Division Heads. To ensure adequate review, and as a requirement for external use of a paper for publication or a presentation at meetings, the first author shall circulate the paper or the presentation to coauthors for review and approval. Having done this, the first author shall submit the paper or the presentation, at least 7 days in advance of the external use, to the responsible Division Heads and the Head of Physics Analysis, with copy to the NSTX Program and Project Directors. The Head of Physics Analysis or his designate shall, upon receipt, inform the Team and post the material on the Web for Team-wide comment to the first author. The Head of Physics Analysis or his designate shall issue the required approval before the external use. Disputes about the paper or the presentation that are not resolved among the authors or the team members shall be brought promptly to the attention of the responsible Division Heads and the Head of Physics Analysis for resolution.

7) Presentations and accompanying papers at conferences and workshops of NSTX physics results will be coordinated and recommended by the Head of Physics Analysis in consultation with the Division Heads, for approval by the Project and Program Directors. Major presentations will require rehearsal to the NSTX Research Team at an appropriate time (≥ 1 week before travel by the presenters).

8) In order to disseminate knowledge to the full Research Team and the public, presentations and publications will normally be posted on the WEB, either at the researcher's home institutions and linked to the NSTX server, or directly on the NSTX server. In addition, results will be written up and disseminated as a PPPL report or a report of a Research Team member's home institution. Patent clearance according to the policies of the institution issuing the report and acknowledgment of DOE funding are required for all reports. The patent clearance and institutional report system of the first author's home institution will be utilized unless the first author, if not a PPPL employee, chooses to issue the report via the PPPL system.

9) The first author of report or publication on NSTX research results, prepared by the home institution of a Research Team member, should in a timely manner inform the NSTX Research Team by submitting copy of the report or publication to the NSTX Head of Physics Analysis.

Signature _____

Date _____

Institution _____

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Attachment 3

Record of Agreement (RoA) between NSTX and Collaborating Institution

Key agreements and updates of NSTX collaboration between collaborating institutions and NSTX Program and Project involving major incoming personnel assignment and diagnostic hardware (Email to mpeng@ornl.gov and Jonathan Menard (jmenard@pppl.gov))

<u>Title of DOE-Funded Collaboration Research Activities:</u>		<u>DOE Funding or Approved Duration:</u> mm/dd/yy – mm/dd/yy:
<u>Collaborating Institution:</u>	<u>RoA Updates:</u> Version 1, Date: Updated Version(s), Date(s): Anticipated next update:	<u>Date of Tasks Completion:</u> 1) 2) etc.
<u>Collaboration Principal Researcher:</u> Name: Email: Tel: Signature: Date:		<u>NSTX On-Site Research Contact:</u> Name: Email: Tel: Signature: Date:
<u>Collaboration Research Goals:</u>		
<u>Collaboration Research Tasks (Including Base and Incremental):</u>		
1)	<u>Interface & On-Site Tasks to be Carried out by NSTX in Support of the Collaboration Research Tasks:</u>	
2)		
Etc.		
<u>Planned Deliverables (Milestones) from these Tasks and Dates of Delivery to NSTX Team (Date of Completion):</u>		
1)		
2)		
Etc.		
<u>Approximate Dates for Reviews and updates of Major Milestones:</u>		
1)		
2)		
Etc.		

<u>Major Components of the Collaboration Research Hardware System:</u> 1) 2) Etc.	<u>Major Components of Interface & Other Systems Provided by NSTX:</u> 1) 2) Etc.
<u>Design and Acceptance Criteria for the Incoming Components:</u> 1) 2) Etc.	<u>Design and Acceptance Criteria for the NSTX Components:</u> 1) 2) Etc.
<u>Schedule and Cost Estimates Including Contingency to Completion for the Incoming Components:</u> 1) 2) Etc.	<u>Schedule and Cost Estimates Including Contingency to Completion for the NSTX Components:</u> 1) 2) Etc.
<u>Key Collaboration Personnel and Areas of Responsibility:</u> PI: Others (Physicists, Engineers, Technicians, etc.):	<u>Key NSTX Personnel and Areas of Responsibility:</u>
<u>Remaining Collaboration Researcher Questions, Issues, and Comments:</u> 1) 2) etc.	<u>Responses by NSTX On-Site Research Contact:</u> 1) 2) etc.
<u>Additional Recommendations, if Any, by Collaborator and Research Contact:</u> 1) 2) etc.	

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Comments:

RoA Approved by NSTX Program Director

Concurred by NSTX Project Director

Signature

Date

Signature

Date

Optional Comments by Principal Collaborator upon Completion of Collaboration Tasks:

Signed:

Optional Comments by NSTX Research Contact upon Completion of NSTX Tasks:

Signed:

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