

**Princeton Plasma Physics Laboratory  
D-SITE Procedure**

**Procedure Title:**  
**NSTX OPERATIONS TRAINING**

**Number:**  
**OP-NSTX-12**

**Revision:**  
**1**

Effective Date:  
*(Ref. OP-AD-97)*  
Expiration Date:  
*(2 yrs. unless otherwise stipulated)*

**Procedure Approvals**

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Responsible Division: **NSTX Operations**

**Procedure Requirements**  
designated by RLM

		Lockout/Tagout (OP-AD-61)
	D-Site Work Permit (OP-AD-09)	Door Permit (OP-G-93)
	Tritium Work Permit (OP-AD-49)	T-MOD (OP-AD-03)
	RWP (HP-OP-20)	Lift Procedure (ENG-021)
	Confined Space Permit	DCA/DCN (OP-AD-104)
	Pre-job brief (OP-AD-79)	ATI Walkdown
	USQD (OP-AD-63)	Independent Review
	Master Equip. List Mod (OP-AD-112)	ES&H Review (NEPA, IH, etc.)

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NSTX Physics	

<b>TRAINING</b> (designated by RLM)			
No training required <input checked="" type="checkbox"/> Instructor _____			
Personnel (group, job title or individual name)	Read Only	Instruction	Hands-On
This Procedure describes training requirements and provides checklists for documenting training			
Training Rep. _____			

RLM \_\_\_\_\_

## TABLE OF CONTENTS

1.0	PURPOSE.....	4
2.0	SCOPE.....	4
3.0	REFERENCES.....	4
4.0	DEFINITIONS.....	4
5.0	RESPONSIBILITIES.....	5
6.0	GENERAL REQUIREMENTS.....	5
6.1	Personnel Selection	
6.2	Exceptions to Training	
6.3	Medical Examinations	
7.0	TRAINING REQUIREMENTS.....	5
7.1	Training Required for NSTX Accessors	
7.2	Operator Training Requirements	
7.3	Operations Supervisor Training Requirements	
7.4	Maintenance of Training	
8.0	TRAINING RECORDS.....	6
	ATTACHMENTS.....	7
	Attachment 1 - NSTX Vacuum Systems Operator	
	Attachment 2 - NSTX Water Systems Operator	
	Attachment 3 - NSTX FCPC Systems Operator	
	Attachment 4 - NSTX MG Systems Operator	
	Attachment 5 - NSTX Machine Systems Operator	
	Attachment 6 – NSTX COE	
	Attachment 7 – NSTX ECH-PI Operator	
	Attachment 8 – NSTX HHFW Operator	
	Attachment 9- NSTX NB Operations Supervisor	
	Attachment 10 – NSTX NB Beamline Subsystems Operator	
	Attachment 11 – NSTX NB Helium Refrigerator Operator	
	Attachment 12 – NSTX NB Ion Source Operator	

## 1.0 PURPOSE

This procedure describes the positions and training requirements for NSTX operations personnel.

## 2.0 SCOPE

This procedure applies to NSTX accessors and operator personnel, as identified in this document, and covers only the training necessary for access and operations. Training for jobs outside the scope of normal operations ( radiation work, confined space entry, etc.) and for tour guide access are covered elsewhere.

## 3.0 REFERENCES

- 3.1 Policy P-008, "Staff Training"
- 3.2 Policy P-029, "Testing for Training Courses"
- 3.3 PPPL Procedure TR-001, "Laboratory Wide Training Program"
- 3.4 PPPL Procedure TR-002, "Minimum Access Training and Escort Requirements"
- 3.5 TR-005, "Instructor Qualification and Requalification"
- 3.6 TR-006, "Establishing Qualification and Certification Requirements"

## 4.0 DEFINITIONS

- 4.1 Accessor - persons responsible for NSTX diagnostics, computer equipment or other ancillary systems within the NSTX experimental areas. This includes physicists, collaborators or skilled maintenance personnel. Accessors do not require escorts in the NSTX experimental areas.
- 4.2 Operators - persons responsible for manipulating NSTX controls, monitoring NSTX parameters, and operating NSTX equipment. The NSTX defined operator positions are:
  - Vacuum Systems Operator
  - Water Systems Operator
  - Field Coil Power Conversion (FCPC) Operator
  - Motor Generator Operator (MG) Operator
  - Machine Systems Operator (also called a Machine Tech)
  - ECH-PI Operator
  - HHFW Operator
  - NB Beamline Subsystems Operator
  - NB Helium Refrigerator Operator
  - NB Ion Source Operator
- 4.3 Operations Supervisors - persons with operator responsibilities and responsibilities for systems coordination, oversight, and operations safety. The NSTX defined Operations Supervisors are:
  - Chief Operating Engineer
  - Physics Operator
  - NB Operations Supervisor

## 5.0 RESPONSIBILITIES

- 5.1 NSTX Project Manager is responsible for implementing the requirements of this document.
- 5.2 The NSTX Project is responsible for managing training, keeping this document current and making necessary revisions to it.

## 6.0 GENERAL REQUIREMENTS

### 6.1 Personnel Selection

Personnel are assigned to positions which support NSTX operations based upon an evaluation of their education, experience, previous training, and existing job skills and capabilities. It is the responsibility of management to assure that personnel assigned to a specific job function have the requisite background and/or receive sufficient training.

### 6.2 Exceptions to Training

Exceptions to training (individual training course exceptions and job incumbency exceptions) are granted in accordance with the requirements of TR-006, "Establishing Qualification and Certification Requirements".

### 6.3 Medical Examinations

- 6.3.1 Medical examinations are not required unless specifically identified as required within an individual training or operations procedure.
- 6.3.2 Medical examinations required by certain ES&H training courses (such as Respiratory Protection) shall be completed.

## 7.0 TRAINING REQUIREMENTS

### 7.1 Training Required for NSTX Accessors

The training required for D-Site access is defined in PPPL Procedure TR-002, "Minimum Access Training and Escort Requirements." TR-002 is supplemented by other D-Site procedures which define specific access requirements for other D-Site areas which must be met in order to gain access to those areas. The minimum training required for an unescorted NSTX Accessor includes:

- a. General Employee Training (GET)
- b. Radiation Safety Training
- c. Lockout/Tagout Training
- d. Basic Electrical Safety
- e. Procedures Training on:
  - OP-AD-39, Conduct of Operations
  - OP-AD-56, Chain of Command
  - OP-AD-09, Work Permits
  - OP-AD-03, Temporary Modifications
  - OP-AD-24, Control of Workplace Cleanliness
  - OP-AD-117, NSTX Access

Completion of access training does not automatically grant access authorization. Once the required training is accomplished, the NSTX Operations Manager must

authorize the card readers to allow entry to the Accessor. NSTX management retains the right to authorize or deny access at any time.

Personnel Accessing the NSTX test cell are expected to follow the requirements specified in the above procedures and of the Radiation Work Permits (RWP) for the test cell in general or for specific activities. The NSTX Operations Manager will notify authorized accessors when a new general RWP is in force which then must be signed by each accessor prior to their next test cell entry.

## 7.2 Operator Training Requirements

7.2.1 In addition to the training defined in 7.1, Operators require training on the specific operating procedures of their systems. Attachments 1 through 5 show the Operator positions and their associated required operations procedures training.

7.2.2 Operators are required to receive instructional discussion from the systems cognizant engineer (Cog) as determined by the Head of NSTX operations. The cog will review, as necessary, system operations, controls, troubleshooting, alarm response and safety. The Cog will recommend in writing to NSTX Management, trained and knowledgeable personnel to be Operators.

## 7.3 Operations Supervisor Training Requirements

7.3.1 In addition to the training defined in 7.1, Operations Supervisors require training on the specific operating procedures of their systems and procedures related to personnel safety, environmental protection and emergency response. Attachments 6 and 7 show the Operations Supervisors positions and their associated required operations procedures training.

7.3.2 Operations Supervisors are required to receive instructional discussion of the major machine systems from the appropriate cognizant systems engineers. The discussion should cover system monitoring, critical parameters, system limits, controls, and alarm response. Attachments 6 and 7 show the systems to be included in the instructional discussions.

## 7.4 Maintenance of Training

7.4.1 Continuing training includes topics which require renewal at periodic intervals (such as GET and ES&H courses) or retraining when the governing document changes (such as procedure revisions).

7.4.2 Personnel are required to maintain training in those topics required to support their job function. If an individual does not maintain training, only that part of their job covered by the lapsed training is impacted. For example, if an individual's "confined space" training has lapsed, the individual cannot perform job duties in a confined space. Lapses in recurrent training do not void an operator's qualification.

7.4.3 Procedure training must be completed prior to implementing the requirements of the affected procedure.

**8.0 TRAINING RECORDS**

The Office of Human Resources shall receive and maintain all training and examination records required to support the training, qualification, and certification, of personnel.

**ATTACHMENTS**