



**Langley Research Center**

**Directive: LPR 1740.7**

**Effective Date: January 18, 2012**

**Expiration Date: November 30, 2016**

**PROCESS SYSTEMS CERTIFICATION PROGRAM**

**National Aeronautics and Space Administration**

## TABLE OF CONTENTS

<b>Chapter</b>	<b>Page</b>
<b>1.0 INTRODUCTION.....</b>	<b>1-1</b>
1.1 Purpose.....	1-1
1.2 Scope.....	1-1
1.3 Responsibilities.....	1-1
<b>2.0 PROCESS SYSTEM CERTIFICATION (PSC) IMPLEMENTATION</b>	
2.1 General Requirement.....	2-1
2.2 Operator Qualification.....	2-2
2.3 Training and Certification Level.....	2-2
2.4 Appointment for Certification.....	2-3
<b>3.0 CERTIFICATION MAINTENANCE.....</b>	<b>3-1</b>
3.1 Annual Training.....	3-1
3.2 Certification Renewals.....	3-1
3.3 Break-In-Service.....	3-1

## APPENDICES

<b>Appendix</b>	<b>Page</b>
<b>A. ACRONYMS.....</b>	<b>A-1</b>

## PREFACE

### P.1 PURPOSE

- a. This Langley Research Center (LaRC) Procedural Requirement (LPR) describes the general requirements that shall be followed to establish training and minimum certification levels for personnel involved with the operations of facilities at LaRC.
- b. This LPR provides requirements for documenting a successful and competent operator certification program that shall be included as a permanent record file in the facility resume.

### P.2 APPLICABILITY

- a. These procedures apply to all persons performing work at LaRC, including civil servants, contractors, research associates, and others. Non-compliance with this LPR will result in appropriate disciplinary action that may include termination for a civil servant employee or exclusion from the Center for a contractor employee.

### P.3 AUTHORITY

- a. NPR 8715.3, "NASA General Safety Program Requirements"

### P.4 APPLICABLE DOCUMENTS AND FORMS

- a. LPR 1740.3, "Facility Safety Head and Facility Coordinator Guide"
- b. NASA Langley Form (LF) 121, "LaRC Safety Documentation Review for Certified Operators"
- c. NASA LF 122, "Facility Safety Awareness and Procedure Review for Certified Operators"
- d. NASA LF 159, "Appointment for Operator Certification"

### P.5 MEASUREMENT/VERIFICATION

None

### P.6 CANCELLATION

LPR 1740.7 dated February 24, 2005

*Original signed on file*

Stephen G. Jurczyk  
Deputy Director

### Distribution:

Approved for public release via the Langley Management System; distribution is unlimited.

Chapter 1

**1.0 INTRODUCTION**

**1.1. Purpose**

1.1.1 The Process Systems Certification (PSC) Program defines the operator certification program for LaRC facilities. The procedural requirements of this program shall be consistent with the requirements of NASA Procedural Requirement (NPR) 8715.3, "NASA Safety Manual."

**1.2. Scope**

1.2.1 The PSC Program shall apply to civil servants and contractors either permanently or temporarily assigned to a LaRC facility as an operator.

*Note: For the purpose of the PSC Program and this document, the term facility is used in a broad sense. A facility can be a high-risk facility, such as the National Transonic Facility (NTF), a piece of research equipment that is included in LaRC's Laboratory Risk Evaluation Program (LREP), or any other facility/system that requires a trained and certified operator.*

**1.3. Responsibilities**

1.3.1 The LaRC Safety and Facility Assurance Branch (SFAB), Safety and Mission Assurance Office (SMAO) shall be responsible for managing the PSC program in accordance with NPR 8715.3.

1.3.2 SFAB, SMAO shall add, delete, or revise the program procedural requirements whenever it is determined that changes are needed in the interest of safety.

1.3.3 The Facility Safety Head (FSH) shall be responsible for assuring the implementation of the PSC Program at a facility.

1.3.4 It shall be the responsibility of the certified operator to use their experience and knowledge to ensure operations are conducted safely.

Chapter 2

**2.0 PROCESS SYSTEM CERTIFICATION (PSC) IMPLEMENTATION**

**2.1 General Requirements**

2.1.1 A Certified Operator is one holding appropriate documentation and officially on record as qualified to perform a specified function or practice a specified skill.

2.1.2 The Facility Safety Head (FSH) shall be responsible for ensuring the overall implementation of a training and certification program that is consistent with this LPR and LPR 1740.3, "Facility Safety Head and Facility Coordinator Guide."

2.1.3 The Facility Coordinator (FC) shall assist the FSH in implementing the training and certification program.

2.1.4 Only trained and certified individuals shall be authorized to operate LaRC facilities.

2.1.5 Individuals who perform or control hazardous operations shall demonstrate the necessary knowledge, skill, and judgment to perform the job safely.

2.1.6 Personnel engaged in potentially hazardous operations shall be trained and certified as capable of operating the equipment and performing their jobs in a safe manner.

2.1.7 The FSH and the FC shall document the Facility systems operations certification training program as part of the Facility Documentation (i.e., Facility Resume or other documentation that is easily accessible) under the FSH control.

2.1.7.1 The required training shall be tailored to the specific system and/or equipment and developed by the FSH, the Supervisor and the Team Lead, if applicable.

2.1.7.2 The training shall be consistent for the level of certification, as identified in Section 2.3.

2.1.7.3 The FSH and Supervisor shall identify applicable documentation ( i.e., Safety Analysis Report (SAR) or Laboratory Risk Evaluation (LRE), facility emergency procedures, Lockout/Tagout program, etc.) required for the certification on the following Langley Forms:

- a. LF 121 - "LaRC Safety Review for Certified Operators," provides a list of safety-related documents.
- b. LF 122 - "Facility Safety Awareness and Procedures Review for Certified Operators."

## 2.1 Operator Qualification

2.2.1 As a minimum, and prior to receiving certification, the operator shall successfully complete training specified by section 2.1.7.1.

2.2.2 As a minimum, the individual shall:

- a. Review and understand the applicable safety–related documents in the Langley Management System (LMS)
- b. Show a working knowledge, paying particular attention to safety awareness, of the hardware associated with their respective areas of responsibility , and
- c. Show a working knowledge of written operating procedures/checklists for proper operation of the facility.

2.2.3 The initial training for all individuals shall consist of classroom and/or on-the-job.

2.2.4 If the FSH considers an individual to have insufficient knowledge of the system configuration for the safe operation of the facility, that individual shall not be declared a qualified operator.

## 2.3 Training and Certification Level

2.3.1 Personnel training shall be determined and structured according to the job being performed and the number of users required to operate the facility.

2.3.2 Three levels of certification shall exist. The criteria for each certification level are identified as follows:

- a. **Level 3** (lowest level of certification) - The individual shall be capable of operating, monitoring, and servicing the system or equipment during facility operations.
  - (1) The individual shall be able to detect an unsafe condition or incorrect action
  - (2) The individual shall be capable of recovering or safely bringing the system or equipment off-line.
  - (3) The individual shall have a Level 2 technician available but not necessarily working in an over-the-shoulder situation.
  - (4) The Level 2 technician shall be within the operational area.
- b. **Level 2** (medium level of certification) - The individual shall meet all the requirements of Level 3.
  - (1) The individual shall be skillful in inspecting hardware prior to facility operation and after operation.

- (2) The individual shall be able to bring the system or hardware from a secured or off state to an operating mode.
- (3) The individual shall be able to secure the system or equipment and bring them down to an off or safe state.

c. **Level 1** (highest level of certification) - The individual shall be capable of operating and trouble-shooting facility systems/equipment.

- (1) The individual shall meet all of the requirements of Level 2 certification
- (2) The individual shall be capable of identifying hardware or software malfunctions and performing minor system repair.

2.3.3 An individual shall initially be trained to meet the minimum requirements to perform Level 3 certification activities.

2.3.4 For an individual to obtain a Level 2 or Level 1 certification, the facility training/certification requirements shall specify a structured review process that includes the FSH, individual's Supervisor/Tech Lead and at least another individual at the same or higher certified level knowledgeable of the system operations.

2.3.5 For an individual to maintain a Level 2 or Level 1 certification, the facility training/certification requirements shall specify a structured review process that includes the FSH, individual's Supervisor and at least another individual at the same or higher certified level knowledgeable of the system operations.

## 2.4 Appointment for Certification

2.4.1 The appointment shall be documented on a NASA LF 159, "Appointment for Operator Certification".

2.4.2 The appointment shall identify the equipment involved and the area and certification level for each individual. Upon successful completion of testing and evaluation, the individual can operate the system for which training and certification has occurred.

2.4.3 The certification is valid for 4 years from the date of issue.

Chapter 3

**3.0 CERTIFICATION MAINTENANCE**

**3.1 Annual Training**

3.1.1 Refresher training shall be performed annually or as technological advances, equipment failures, operating errors, or changes at the facility dictate.

3.1.2 Annual refresher training for certified individuals shall include review of the current safety handbooks, safety interlocks, and emergency response procedures.

**3.2 Certification Renewals**

3.2.1 Recertification training for certified individuals shall be required.

3.2.2 Renewal certification shall require demonstration of proficiency and operating skill.

3.2.3 Certified individuals shall undergo recertification during a period not to exceed 4 years.

**3.3 Break-In-Service**

3.3.1 Each facility shall have a method of information exchange to inform a certified operator of equipment and/or procedural modifications that have occurred during a break-in-service.

3.3.2 When a certified operator returns to operate a facility after a break-in-service of 90 days or more, the facility training/certification requirements shall specify a structured review process that includes the FSH, individual's Supervisor/Tech Lead and at least one other individual at the same or higher certified level knowledgeable of the system operations prior to facility operation.

3.3.3 Disqualification of the individual shall be declared when knowledge and understanding of facility operations cannot be demonstrated.

## APPENDIX A - ACRONYMS

CIL ----- Critical Items List  
FC----- Facility Coordinator  
FSH----- Facility Safety Head  
LaRC ----- Langley Research Center  
LF ----- Langley Form  
LPR ----- Langley Procedural Requirements  
LMS ----- Langley Management System  
LPR ----- Langley Procedural Requirements  
LRE ----- Langley Risk Evaluation  
NASA ---- National Aeronautics and Space Administration  
NPR ----- NASA Procedural Requirements  
PSC ----- Process Systems Certification  
SAR ----- Safety Analysis Report  
SFAB----- Safety and Facility Assurance Branch  
SAR ----- Safety Analysis Report  
SMAO---- Safety and Mission Assurance Office  
SOP ----- Standard Operating Procedure