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Langley Research Center

Directive: LPR 1740.7

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PROCESS SYSTEMS CERTIFICATION PROGRAM

National Aeronautics and Space Administration

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P.1 PURPOSE

This Langley Research Center (LaRC) Procedural Requirements (LPR) details 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. It 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

These procedures apply to all persons performing work at Langley Research Center (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 Safety Manual.”

P.4 REFERENCES

a. LPR 1740.3, “Facility Safety Head and Facility Coordinator Guide”
b. NASA Langley Form 121, “LaRC Safety Manual Review for Certified Operations.”
c. NASA Langley Form 122, “Facility Safety Awareness and Procedure Review for Certified Operators.”
d. NASA Langley Form 159, “Appointment for Operator Certification.”

P.5 CANCELLATION

LPR 1740.7 dated July 22, 2004

Delma C. Freeman
Deputy Director

DISTRIBUTION:
305/Safety and Facility Assurance Branch (SFAB), Safety and Mission Assurance Office (SMAO) (25 copies)

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Chapter 1

1. INTRODUCTION

1.1. Purpose

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

1.2. Scope

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

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. SFAB, SMAO shall add, delete, or revise the program procedural requirements whenever it is determined that changes are needed in the interest of safety. The Facility Safety Head (FSH) shall be responsible for assuring the implementation of the PSC Program at a facility. It shall be the responsibility of the certified operator to use their experience and knowledge to ensure operations are conducted safely.

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Chapter 2

2. PROCESS SYSTEM CERTIFICATION (PSC) IMPLEMENTATION

2.1. General Requirement

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

Only trained and certified individuals shall be authorized to operate LaRC facilities. Individuals who perform or control hazardous operations shall demonstrate the necessary knowledge, skill, and judgment to perform the job safely. 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.

2.2. Operator Qualification

As a minimum, and prior to receiving certification, an individual shall successfully complete all required training. The required training shall be identified by the FSH and consistent for the level of certification, as identified in section 2.3. As a minimum, the individual shall:

- Review and understand the applicable safety–related documents in the Langley Management System (LMS) (see Section 2.4),
- Show a working knowledge, paying particular attention to safety awareness, of the hardware associated with their respective areas of responsibility (see Section 2.5.1), and
- Show a working knowledge of written operating procedures/checklists for proper operation of the facility (see Section 2.5.2).

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

Personnel training shall be determined and structured according to the job being performed and the number of users required to operate the facility. Three levels of certification shall exist. The criteria for each certification level are identified as follows.

- Level 3 - The individual shall be capable of operating, monitoring, and servicing the system or equipment during facility operations. The individual shall be able to detect an unsafe condition or incorrect action and shall be capable of recovering or safely bringing the system or equipment off-line.

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The individual shall have a Level 2 technician available but not necessarily working in an over-the-shoulder situation.

- Level 2 - The individual shall meet all the requirements of Level 3 and shall be skillful in inspecting hardware prior to facility operation and after operation. The individual shall be able to bring the system or hardware from a secured or off state to an operating mode. The individual shall be able to secure the system or equipment and bring them down to an off or safe state.
- Level 1 - The individual shall be capable of operating and trouble-shooting facility systems/equipment. The individual shall meet all of the requirements of Level 2 certification and shall be capable of identifying hardware or software malfunctions and performing minor system repair.

An individual must initially be trained to meet the minimum requirements to perform Level 3 certification activities. After a specified period of on-the-job training, as determined by the FSH, Level 2 certification can be obtained. Level 1 certification shall be reserved for highly experienced personnel, as determined by the FSH.

2.4. Review of LaRC Safety Related Documents

Safety-related documents in the Langley Management System (LMS) present minimum requirements that define procedural requirements and responsibilities for LaRC safety procedures and requirements. The individual shall read and understand the safety-related documents identified as applicable for the facility to the satisfaction of the FSH. NASA Langley Form (LF) 121, “LaRC Safety Review for Certified Operators,” provides a list of safety-related documents. The FC and/or FSH shall identify applicable documentation.

2.5. Facility Awareness and Operation

The individual shall document that they have satisfied the requirements for facility safety awareness of the facility and have working knowledge of facility safety and system configuration (see Section 2.5.1). The individual shall also document that they have satisfactorily completed training requirements for understanding and implementing the operating procedures (OP’s), emergency response procedures, and fire response procedures for the safe operation of the facility (see Section 2.5.2). The individual shall acknowledge completing these requirements by completing NASA Langley Form 122, “Facility Safety Awareness and Procedures Review for Certified Operators,” and the FSH shall concur with the individual’s acknowledgment.

2.5.1. Facility Safety Awareness

Each individual shall understand the interrelationships of subsystem components and monitoring equipment to the satisfaction of the FSH. Personnel shall be trained in facility safety awareness by reviewing and understanding the facility’s configuration and operational requirements to identify the hazards in the system. Personnel shall be familiar with and understand the contents of the safety analysis

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for the facility and, if applicable, the Critical Items List (CIL). A safety analysis documents the risk in terms of severity and probability and describes hazards at the facility and the controls for the identified hazards. At LaRC, a safety analysis takes the form of either a Safety Analysis Report (SAR) or Laboratory Risk Evaluation (LRE).

2.5.2. Operating Procedures (SOP/LOP)

Operating Procedures, either Standard (SOP's) or Laboratory (LOP's), emergency response procedures, and facility fire procedures shall be reviewed and understood. Each individual shall verbally explain and perform the correct tasks for the duties associated with the safe operation of the equipment, work station, and/or control room panel. The individual's performance shall maintain the facility within its performance capabilities and limitations. An individual shall understand the note, caution, and warning alert categories expressed in the SOP's/LOP's and other related information that identify potentially hazardous situations. The individual shall demonstrate sound judgment in decision making. Only approved SOP's, LOP's, or checklists shall be used in training for certification.

2.6. Appointment for Certification

The appointment shall be documented on a NASA Langley Form 159, "Appointmen for Operator Certification," and 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.

The certification shall expire 4 years from the date of issue.

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3. CERTIFICATION MAINTENANCE

3.1. Annual Training

Refresher training shall be performed annually or as technological advances, equipment failures, operating errors, or changes at the facility dictate. Annual refresher training for certified individuals shall include review of the current safety handbooks, safety interlocks, and emergency response procedures.

3.2. Certification Renewals

Recertification training for certified individuals shall be required. Renewal certification shall require demonstration of proficiency and operating skill. Certified individuals shall undergo recertification during a period not to exceed 4 years.

3.3. Break-In-Service

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. When a certified individual returns to operate a facility after a break-in-service of 90 days or more, a verification of knowledge and understanding of facility operations shall occur prior to facility operation. Disqualification of the individual shall be declared when knowledge and understanding of facility operations cannot be demonstrated.

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LPR 1740.7 Appendix A

A. ACRONYMS

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

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