



## Procedures and Guidelines (PG)

**DIRECTIVE NO.** 803-PG-3410.2.2  
**EFFECTIVE DATE:** August 29, 2013  
**EXPIRATION DATE:** August 29, 2020

**APPROVED BY Signature:**   
**NAME:** Glen M. Liebig  
**TITLE:** Chief, Safety Office

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### COMPLIANCE IS MANDATORY

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**Responsible Office:** Code 803/WFF Safety Office  
**Title:** WFF Safety Office Training and Certification Program

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## TABLE OF CONTENTS

### PREFACE

- P.1 PURPOSE
- P.2 APPLICABILITY
- P.3 AUTHORITY
- P.4 APPLICABLE DOCUMENTS/REFERENCES
- P.5 CANCELLATION
- P.6 SAFETY
- P.7 TRAINING
- P.8 RECORDS
- P.9 MEASUREMENT/VERIFICATION
- APPENDIX A - DEFINITIONS
- APPENDIX B - ACRONYMS
- ATTACHMENT 1 - CHANGE HISTORY LOG

## CHAPTER 1.0 PROGRAM OVERVIEW

- 1.1 INTRODUCTION
- 1.2 ROLES AND RESPONSIBILITIES
- 1.3 MAJOR PROGRAM ELEMENTS
  - 1.3.1 INDIVIDUAL SAFETY TRAINING PLANS AND RECORDS (TRAINING JACKETS)
  - 1.3.2 SAFETY CERTIFICATION
  - 1.3.3 SAFETY OFFICE PERSONNEL QUALIFICATION
  - 1.3.4 TASK ANALYSIS

## CHAPTER 2.0 SAFETY CERTIFICATIONS

- 2.1 INTRODUCTION
- 2.2 SAFETY CRITICAL ROLES AND CERTIFICATION REQUIREMENTS

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## PREFACE

### P.1 PURPOSE

This NASA Procedures and Guidelines (PG) defines the Wallops Flight Facility (WFF) Safety Office Training and Certification Program and constitutes the WFF Safety Office Training Plan. This PG provides for implementation of NASA policy in NPR 8715.3, NASA General Safety Program Requirements, Chapter 7, Safety Training and Personnel Certification. This includes the establishment of minimum training certification levels for personnel who serve in defined safety critical roles during potentially hazardous operations under the authority and cognizance of the WFF Safety Office. This PG also provides requirements for ensuring that WFF Safety Office technical and administrative personnel have the knowledge and skills to successfully serve in their positions.

### P.2 APPLICABILITY

This PG contains requirements that generally apply to all organizations, programs, and projects that operate under the authority and cognizance of the WFF Safety Office. This PG contains requirements that specifically apply to personnel within the WFF Safety Office and personnel from other organizations involved in potentially hazardous operations and personnel who require safety certification to serve in defined safety critical roles.

### P.3 AUTHORITY

NPR 8715.3, NASA General Safety Program Requirements  
GPR 3410.2, Employee Task Specific Required and Mandatory Training Requirements

### P.4 REFERENCES

- a. NPR 1800.1, NASA Occupational Health Program Procedures
- b. NPR 8621.1, NASA Procedural Requirements for Mishap and Closecall Reporting, Investigating, and Record Keeping
- c. NPR 8715.3, NASA General Safety Program Requirements
- d. NASA-STD 8719.9, Standard for Lifting Devices and Equipment
- e. NASA-STD 8719.12, Safety Standard for Explosives, Propellants, and Pyrotechnics
- f. NASA-STD 8719.17, NASA Requirements for Ground-Based Pressure Vessels and Pressurized Systems
- g. GPR 1860.2, Laser Radiation Protection
- h. GPR 1860.3, Radio Frequency Radiation Protection
- i. 800-PG-8715.0.2C, Training and Certification Procedures for Ordnance handlers at GSFC/WFF
- j. 800-PG-8715.0.4A, Certification Procedures for Operations Safety Supervisors at Wallops Flight Facility (WFF)
- k. 29 CFR Part 1910, Occupational Safety and Health Standards
- l. ANSI Z136.1, Safe Use of Lasers

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<b>EFFECTIVE DATE:</b>	August 29, 2013
<b>EXPIRATION DATE:</b>	August 29, 2020

- m. IEEE C95.1, Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz
- n. RSM-2002, Range Safety Manual for GSFC/WFF
- o. NFPA Standard 1582
- p. GSFC23-35LU, Laser Radiation Source Personnel Approval
- q. GSFC23-35RF, RF/EMF Radiation Source Personnel Approval
- r. Wind Weighting User's Manual (maintained by the WFF Lead Wind Weighter)
- s. Expendable Launch Vehicle Range Safety Officer Initial Plan of Instruction and Reoccurring Training
- t. Sounding Rocket Range Safety Officer Initial Plan of Instruction and Reoccurring Training
- u. Balloon Range Safety Officer Initial Plan of Instruction and Reoccurring Training
- v. Unmanned Aircraft Systems (UAS) Range Safety Officer Initial Plan of Instruction and Reoccurring Training
- w. Skyscreen Operator Initial Plan of Instruction and Reoccurring Training
- x. Surveillance Officer Initial Plan of Instruction and Reoccurring Training
- y. System Safety Officer Initial Plan of Instruction and Reoccurring Training

**Note:** *All Plans of Instruction for operational roles are maintained by the WFF Range Safety Officer Group.*

## **P.5 CANCELLATION**

N/A

## **P.6 SAFETY**

N/A

## **P.7 TRAINING**

NASA SMA Technical Excellence Program (STEP) Level 1  
See Table 2-1 for task specific training

## **P.8 RECORDS**

<b>Record Title</b>	<b>Record Custodian</b>	<b>Retention</b>
Safety Training Jacket	Employee and Supervisor	NRRS 3/33 H1: Record keeping copy (paper) destroy on transfer or separation of employee, or when 5 years old, whichever is sooner.

\* NRRS – NASA Records Retention Schedule ([NPR 1441.1](#))

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## P.9 MEASUREMENT/VERIFICATION

The WFF Safety Office shall establish metrics aimed at improving personnel safety training, qualification, and certification. All established metrics and reporting processes shall be reviewed and signed by the Chief, WFF Safety Office for completeness. The metrics and status reports shall be maintained and posted to the WFF Safety Office website.

## PROCEDURES

In this document, a requirement is identified by “shall,” a good practice by “should,” permission by “may” or “can,” expectation by “will,” and descriptive material by “is.”

### Chapter 1.0 Program Overview

#### 1.1 Introduction

WFF operates facilities and conducts missions that involve launching, flying, landing, and testing space and aeronautical vehicles and associated technologies. These activities can pose significant risk to life and property. Safety related training designed to mitigate safety risk is considered critical to the protection of the public, workforce, and property. This PG defines all elements of the WFF Safety Office Training and Certification Program and constitutes the WFF Safety Office Training Plan.

#### 1.2 Roles and Responsibilities

1.2.1 WFF Safety Office Chief (or designee) shall:

- a. Approve the WFF Safety Office Training and Certification Program policies and requirements.
- b. Oversee and ensure funding for administration of the WFF Safety Office Training and Certification Program.
- c. Develop, coordinate, and update WFF Safety Office’s training and certification policy, requirements, and plans, including this PG.

***Note: As a minimum the WFF Safety Office will lead the review and update of this PG on the general five-year cycle. The WFF Safety Office Chief will determine the need for any interim updates.***

- d. Designate a WFF Safety Office Training Coordinator (see paragraph 1.2.5).
- e. Determine personnel safety training and certification needs for all WFF operations (i.e., all operations performed under the authority and cognizance of the WFF).
- f. Establish safety certification processes and criteria for personnel performing safety critical roles.

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- g. Annually review WFF operations to ensure that the Safety Office Training and Certification Program is effective and to identify any additional safety training/certification needs.
- h. Identify, obtain, and/or develop (when necessary) training courses suited to specific WFF safety needs.
- i. Ensure subject matter experts review safety training materials at least annually and update materials as needed when regulatory agencies or changes in NASA policy generate technical changes.
- j. Establish training and other qualifications for each Safety Office technical and administrative position.
- k. Oversee training efforts and ensure the training quality.
- l. Identify budget requirements for safety training.
- m. Ensure that training records are maintained and accurately reflect employee safety training and certification status.
- n. Issue safety certifications to personnel in accordance with the provisions of this PG.

1.2.2 Program, Project, and Line Managers operating under the authority and cognizance of the WFF Safety Office (including contractors and commercial tenants) shall ensure that personnel who perform hazardous operations, control hazardous operations, use hazardous material, or transport hazardous material participate in the WFF Safety Office Training and Certification Program and satisfy the associated requirements.

***Note: Contractor and commercial tenant personnel may be trained directly under the WFF Safety Office Training Program or via an equivalent process that is reviewed and accepted by the WFF Safety Office. Such equivalent training will be considered as part of the safety certification process.***

1.2.3 NASA Personnel subject to the NASA Safety Office Training and Certification Program shall:

- a. Actively pursue the training and certifications required for their position(s) and assigned role(s).
- b. Maintain their individual training and certification records.

***Note: Contractor personnel subject to the NASA Safety Training and Certification requirements will maintain related records per their company policies.***

1.2.4 Trainers NASA and WFF personnel responsible for presenting training materials and/or leading on-the-job and other training activities shall actively maintain their trainer qualifications including remaining current on the latest information, technology, and techniques related to area(s) of expertise and their training responsibilities.

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### 1.2.5 WFF Safety Office Training Coordinator shall:

- a. Lead the Safety Office's execution of this PG including the development of supporting documents and processes.
- b. Serve as the focal point for all matters involving training and certification for Safety Office personnel.

## 1.3 Major Program Elements

### 1.3.1 Individual Safety Training Plans and Records (Training Jackets). Each NASA employee subject to this PG shall maintain a Training Jacket that identifies the following as applicable to the employee:

- a. Required qualifications and certifications associated with the employee's duties.
- b. Required general safety training and training associated with the employee's position and assigned specific roles(s) including classes and on-the-job training as identified by task analyses performed per paragraph 1.3.4 of this PG.
- c. Required safety training related standards applicable to the employee's position and roles(s) (NASA, GPRs, PGs and Federal Regulations); familiarization with each such standard shall be confirmed by the employee's supervisor via signature on the associated training record.
- d. Milestones with estimated time needed to complete.
- e. Training and certification status maintained by the employee and confirmed by the employee's supervisor via signature on the associated training record at key milestones (completion initialed, signed and dated by both employee and supervisor).

***Note: Contractor personnel subject to NASA Safety Training and Certification requirements will maintain related records per their company policies.***

### 1.3.2 Safety Certification

- a. All personnel who serve in a safety critical role identified in Chapter 2 of this PG shall undergo a certification process that ensures the personnel possess the necessary knowledge, skill, judgment, and physical ability to conduct operations in a safe manner.
- b. Safety certification at WFF shall include the following general elements in addition to role specific elements:
  - (1) A physical examination as determined by the WFF Medical Office.
  - (2) Initial training (classroom, online, and/or on-the-job).

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- (3) A written or documented table-top examination to determine adequacy and retention of training.
- (4) Periodic refresher training as determined by the WFF Safety Office or other WFF certifying authority, including review of emergency response procedures.
- (5) A recertification period as determined by the WFF Safety Office or other certifying authority in the absence of any local, State, or Federal requirements (but not to exceed a four-year interval).
- (6) Applicable requirements of 29 CFR Part 1910, Occupational Safety and Health Standards.
- (7) Specific training in the Federal, NASA, and local rules for preparing, packaging, marking, and transporting hazardous material and/or equipment operation associated with the job.
- (8) For individual certifications, the issuance of a card, letter, or other formal document by the WFF Safety Office to each certified person that indicates the individual's name, date of certification, materials or operations for which the certification is valid, signature of certifying official, and date of expiration.
- (9) For operational team certification for a specific mission, the issuance of a letter, or other formal document by the WFF Safety Office to the team members and other organizations involved in the mission that identifies the specific mission(s) for which the team certification is valid, each team member and their role, and the signature of the certifying official.

***Note: Chapter 2.0 of this PG identifies the safety critical roles at WFF that require certification and the associated specific certification requirements.***

- c. The Certifying Official for each safety critical role (identified in Table 2-1 of this PG) has final certification authority and may identify equivalent, supplemental, and/or additional training/certification requirements on a case-by-case basis as needed to certify an individual for a specific role.

### 1.3.3 Safety Office Personnel Qualification

- a. All WFF Safety Office technical and administrative personnel (including support contractor personnel) shall undergo a qualification process to ensure they have the knowledge and skills to successfully serve in their position(s).
- b. Qualification of WFF Safety Office personnel shall include the following general elements in addition to position specific elements:
  - (1) Technical qualifications that vary by mission type/complexity.
  - (2) Defined pre-requisites/experience/education.

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<b>EFFECTIVE DATE:</b>	<u>August 29, 2013</u>
<b>EXPIRATION DATE:</b>	<u>August 29, 2020</u>

Page 8 of 19

- (3) In-house and external classes.
- (4) On-the-job training.
- (5) Software and analysis tools training.
- (6) Completion of the NASA SMA Technical Excellence Program (STEP) Level 1 training.

1.3.4 Task Analysis. The WFF Safety Office shall conduct task analyses that provide critical input to the training, qualification, and/or certification requirements for each safety role and position.

a. Each task analyses shall define:

- (1) Training flows (i.e., logical progression of training activities) and clear objectives for each training activity.
- (2) Clear approach for how each objective will be accomplished by the trainee through the use of course or other activity descriptions and lesson plans.
- (3) Estimates of the time needed to accomplish each objective.

b. The WFF Safety Office shall document the results of each task analysis in an 803-Work Instruction (WI) or other WFF Safety Office document maintained under configuration control.

c. The WFF Safety Office shall incorporate applicable task analysis results in Individual Safety Training Plans.

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**Chapter 2.0 Safety Certifications**

**2.1 Introduction**

Safety certification at WFF generally applies to personnel who serve in safety critical roles that involve real-time decision making. Safety certification also applies to specific roles as defined by Agency policy and Federal, state, or local regulations as applicable to WFF.

**2.2 Safety Critical Roles and Certification Requirements**

Table 2-1 of this PG identifies the safety critical roles under the cognizance of the WFF Safety Office that require certification, provides related requirements and information, and identifies the Certifying Official. The certification process for each safety critical role listed shall incorporate the general requirements provided in Paragraph 1.3.2 of this PG and the specific requirements listed and/or referenced in Table 2-1.

**Table 2-1 Safety Certifications**

Safety Critical Role	Certification Requirements Reference/Summary	Certifying Official
<p><b>Flight Safety Officer (FSO):</b> For missions with a Flight Termination System (FTS), the FSO implements flight rules and initiates the FTS as needed to protect the public, workforce, and property. The FSO also conducts countdown procedures for final FTS certification.</p> <p><i>Note: The WFF RSO Group oversees FSO training and certification.</i></p>	<ol style="list-style-type: none"> <li>1. WFF Expendable Launch Vehicle (ELV) Range Safety Officer (RSO) Initial Plan of Instruction and Reoccurring Training (maintained by the WFF RSO Group)</li> <li>2. Participate in Mission Specific Training/Simulation activities, Practice Countdowns and Dress Rehearsals</li> </ol>	<p>WFF Range Safety Officer</p>
<p><b>Ground Safety Officer (GSO):</b> An independent safety observer stationed with the launch vehicle team in a location other than the Range Control Center (e.g., a blockhouse) and has the authority to stop work or hold a launch based on implementation of safety rules and criteria.</p> <p><i>Note: The WFF RSO Group oversees GSO training and certification.</i></p>	<p>On-The-Job Training:</p> <ol style="list-style-type: none"> <li>1. Shadow a certified GSO during all related activities for at least one launch or equivalent.</li> <li>2. Familiarization with the GSO station, communication net, communication protocols, and operation of the launch hold/abort controls/system as applicable.</li> <li>3. Review the countdown procedure and participate in practice countdowns and dress rehearsals.</li> <li>4. Demonstrate readiness to activate the launch/hold button/system; know under what conditions to hold/abort a launch.</li> </ol>	<p>WFF Range Safety Officer</p>

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**DIRECTIVE NO.** 803-PG-3410.2.2  
**EFFECTIVE DATE:** August 29, 2013  
**EXPIRATION DATE:** August 29, 2020

Safety Critical Role	Certification Requirements Reference/Summary	Certifying Official
	5. Know the launch clearance plan and the GSO roles and responsibilities for implementation. 6. Know when and how to coordinate with Emergency Operations Center (EOC) and Security during nominal and emergency operations. 7. Provide FTS data to the RSO as a back-up to the System Safety Officer (SSO).	
<p><u>Interim Response Team (IRT) Member:</u>            An IRT arrives at a mishap scene immediately after an incident; secures and documents the scene; identifies witnesses; collects written witness statements and contact information; preserves evidence; impounds evidence; implements the chain-of-custody process for the personal effects of the injured and deceased; notifies the NASA Office of Communications' Officer about casualties, damages, and any potential hazards to the public and NASA personnel; advises the supervisor if drug testing should be initiated; and provides all information and evidence to the investigating authority. The team operates as a short-term response team and concludes its mishap-response activities when the official NASA-appointed investigating authority arrives at the scene and takes control.</p>	1. SMA-002-07, Overview of Mishap Investigation (System for Administration Training and Educational Resources for NASA (SATERN) Computer Based Training (CBT) 2. SMA-002-08, Mishap Investigation Roles and Responsibilities (SATERN CBT) 3. SMA-002-09, Completing the Investigation and Mishap Report (SATERN CBT) 4. SMA-002-10, Root Cause Analysis (SATERN CBT) 5. OCC-001-07, Bloodborne Pathogens (SATERN CBT) 6. ICS-100.b, Introduction to the Incident Command System (Federal Emergency Management Agency (FEMA) CBT 7. GSFC-Interim Response Team Training (SATERN registration, Instructor Led)	Chief, WFF Safety Office
<p><u>Mishap Investigation Team (MIT) Member:</u>            The MIT is a NASA-sponsored team that consists of Federal employees where the majority of the members are independent from</p>	1. All IRT Training 2. SMA-SAFE-OSMA-4004, Human Factors in Mishap Investigation (SATERN registration, Instructor Led) 3. IS-200.b, ICS for Single Resources and Initial Action Incidents (FEMA CBT), Desired	Chief, WFF Safety Office

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**DIRECTIVE NO.** 803-PG-3410.2.2  
**EFFECTIVE DATE:** August 29, 2013  
**EXPIRATION DATE:** August 29, 2020

Safety Critical Role	Certification Requirements Reference/Summary	Certifying Official
<p>the operation or activity in which the mishap occurred; includes a safety officer and a human factors mishap investigator; and is tasked to investigate a mishap or close call and generate the mishap report per the requirements specified in NPR 8621.1, <i>NASA Procedural Requirements for Mishap and Close call Reporting, Investigating and Recordkeeping.</i></p>	<p>4. IS-700.a, National Incident Management System, An Introduction (FEMA CBT), Desired            5. IS-800.b, National Response Framework, An Introduction (FEMA CBT), Desired</p>	
<p><u>Mission Range Safety Officer (MRSO):</u> Oversees the safety team during range operations, safety plans, and has authority to grant operational deviations from requirements set forth in safety plans provided there are no violations of the Range Safety Manual for GSFC/WFF (RSM-2002).</p>	<p>1. WFF Sounding Rocket RSO Initial Plan of Instruction and Reoccurring Training            2. WFF ELV RSO Initial Plan of Instruction and Reoccurring Training            3. WFF Balloon RSO Initial Plan of Instruction and Reoccurring Training            4. WFF Unmanned Aerial System (UAS) RSO Initial Plan of Instruction and Reoccurring Training            5. Continuing Mission Specific Training/Simulations</p> <p><b>Note: All RSO Plans of Instruction are maintained by the WFF RSO Group.</b></p>	<p>WFF Range Safety Officer</p>
<p><u>Operations Safety Supervisor (OSS):</u> Supervises hazardous ground operations, ensures implementation of Ground Safety Plans and operating procedures, has the authority to approve minor changes to procedures in real-time provided there is no violation of the Range Safety Manual for GSFC/WFF.</p>	<p>800-PG-8715.0.4, Certification Procedures for Operations Safety Supervisors at Wallops Flight Facility.</p>	<p>Chief, WFF Safety Office</p>

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**DIRECTIVE NO.** 803-PG-3410.2.2  
**EFFECTIVE DATE:** August 29, 2013  
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Safety Critical Role	Certification Requirements Reference/Summary	Certifying Official
<p><u>Risk Assessment Center (RAC) Analyst:</u> Includes Toxic Analysts and Distance Focus Overpressure (DFO) analysts who operate real-time risk assessment tools and provide results to the MRSO to verify criteria are satisfied for launch and to the Emergency Operations Center to develop response in the event of a vehicle failure early in flight.</p> <p><i>(Note: The WFF RAC Leader oversees the training and certification of RAC Analysts.)</i></p>	<ol style="list-style-type: none"> <li>1. Self-Study: Review presentation charts on Blast/DFO and Toxics Analyses Processes and the RAC Analyst Manuals.</li> <li>2. Participate in two Blast/DFO simulations and two toxics simulations with archived balloon data.</li> <li>3. Participate in two Blast/DFO simulations and two toxics simulations with live balloon data and WFF Weather Office support.</li> <li>4. Perform tasks of the Lead RAC analyst to include updating/installing new software, system testing and validation, and documenting analysis results.</li> <li>5. On-The-Job Training during an ELV launch/launch attempt under the cognizance of the RAC Leader: Serve as Blast/DFO analyst (for Blast/DFO certification) and Toxics analyst (for toxics certification).</li> <li>6. Continuing Mission Specific Training/Simulations: A minimum of four simulations for each analysts prior to the first launch attempt for each ELV mission.</li> </ol>	<p>WFF Range Safety Officer with concurrence of the RAC Leader</p>
<p><u>Skyscreen Operator:</u> A visual observer who provides vehicle position and attitude data to the FSO early in flight. Each ELV mission typically employs a Pitch Skyscreen position and a Back Azimuth Skyscreen position.</p> <p><i>Note: The WFF RSO Group oversees Skyscreen Operator training and certification.</i></p>	<ol style="list-style-type: none"> <li>1. Skyscreen Operator Initial Plan of Instruction and Reoccurring Training (maintained by the WFF RSO Group)</li> <li>2. Participate in Mission Specific Training/Simulation activities, Practice Countdowns and Dress Rehearsals</li> </ol>	<p>WFF Range Safety Officer</p>
<p><u>Surveillance Officer (SO):</u> Reports to the MRSO, operates ship and aircraft surveillance systems in the Safety Control Room, ensures ship and aircraft clearances, provides associated risk assessments, and works to</p>	<ol style="list-style-type: none"> <li>1. SO Initial Plan of Instruction and Reoccurring Training (maintained by the WFF RSO Group). Self-Study: Review documentation on all surveillance assets and the Surveillance Self-Study Guide (maintained by the RSO Group). On-The-Job Training:</li> <li>2. Observe one launch attempt in the Range Control Center (RCC) Surveillance Room.</li> </ol>	<p>WFF Range Safety Officer</p>

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Safety Critical Role	Certification Requirements Reference/Summary	Certifying Official
<p>ensure related safety criteria are met for launch.</p> <p><i>Note: The WFF RSO Group oversees SO training and certification.</i></p>	<p>3. Shadow a certified SO/Trainer for at least one launch attempt in the RCC Safety Room.</p> <p>4. Receive instruction by a certified SO/Trainer on the operation and interpretation of the safety surveillance displays and the associated tools and techniques used to make real-time safety surveillance decisions.</p> <p>5. Serve as an SO-in-training under the direction and supervision of a certified SO/Trainer for at least three complete missions.</p>	
<p><u>System Safety Officer (SSO):</u> For mission with an FTS, the SSO serves as an assistant to the FSO for pre-mission testing of the FTS as well as directing communication with local and downrange command sites. The SSO also observes the FTS data while the vehicle is in flight and provides contingency communication between the FSO and command sites.</p> <p><i>(Note: The WFF RSO Group oversees SSO training and certification.)</i></p>	<p>1. SSO Initial Plan of Instruction and Reoccurring Training (maintained by the WFF RSO Group)</p> <p>2. NASA Safety Training Center's (NSTC) Course on Flight Safety Systems (i.e. the FTS Course).</p> <p>3. NSTC's Course on Range Safety Operations, or equivalent training or experience.</p> <p>4. Shadow the FTS Lead assigned to an active ELV mission.</p> <ul style="list-style-type: none"> <li>- Participate during tailoring of the FTS requirements for the vehicle/mission.</li> <li>- Review FTS component performance specifications, plans and procedures to review for compliance.</li> <li>- Shadow FTS Lead during pre-launch FTS Certification Tests and mission training activities.</li> </ul> <p>5. For each assigned mission, review mission specific telemetry parameters for compliance and participate in mission specific ELV RSO/FSO Failure Mode and Response Training.</p>	<p>WFF Range Safety Officer</p>
<p><u>Wind Weighter (WW):</u> For sounding rocket missions, the WW gathers wind data and assesses safety criteria for wind corrected setting for launch, wind limits, wind drift of debris due to destruct action, wind drift of vehicles/payloads on parachutes, etc. The WW informs the MRSO</p>	<p>Self-Study: Review Wind Weighting User's Manual and related documentation (maintained by the Safety Office Lead Wind Weighter).</p> <p>On-the-Job Training: Serve as a WW in-training under the direction and supervision of a certified WW/Trainer for at least one complete mission.</p> <p>1. Prepare and verify wind weighting computers for launch.</p>	<p>WFF Range Safety Officer with concurrence of the Lead Wind Weighter</p>

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Safety Critical Role	Certification Requirements Reference/Summary	Certifying Official
<p>if all wind related limits defined in the Flight Safety Plan are met prior to launch.</p> <p><i>(Note: The WFF Lead Wind Weighter oversees WW training and certification.)</i></p>	<p>2. Operate the system and make real time decisions regarding accuracy of input data and analysis results.</p> <p>3. Determine acceptability of winds, launcher settings, impacts, and other flight safety limits.</p> <p>4. Recognize errors within the operation of the system and troubleshoot issues.</p> <p>5. Prepare related documentation logs and records.</p>	
<p>Certified Industrial Hygienist</p>	<p>Certification by the American Board of Industrial Hygiene (ABIH)</p> <p>(Note: Certification requirements are available at: <a href="http://www.abih.org/become-certified/eligibility">http://www.abih.org/become-certified/eligibility</a>)</p>	<p>ABIH</p>
<p>Fire Fighter</p>	<p>Requirements of the State of Virginia and/or National Fire Protection Association Standards (NFPA) to include:</p> <p>1. Virginia Department of Fire Programs Fire Fighter II (or nationally recognized equivalent)</p> <p>2. Current Emergency Vehicle Operator Course (EVO) completion of certification at the level of at least 2(3 preferred). Equivalent course completion and certification may be considered if it meets the requirements of Virginia Department of Fire programs requirements for EVO.</p> <p>3. Current Hazardous Materials Operations Level Certification (NFPA 472).</p> <p>4. Current Emergency Medical Technician Certification accredited through the State of Virginia, Department of Health.</p> <p>Physical Requirements of NFPA Standard 1582, which includes passing a medical examination prior to assignment of duty and every year thereafter.</p>	<p>WFF Fire Department</p>
<p>Propellant and Explosives User</p>	<p>NASA-STD 8719.12, Safety Standard for Explosives, Propellants, and Pyrotechnics</p>	<p>WFF Ordnance Training &amp; Certification Committee</p>

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**DIRECTIVE NO.** 803-PG-3410.2.2  
**EFFECTIVE DATE:** August 29, 2013  
**EXPIRATION DATE:** August 29, 2020

<b>Safety Critical Role</b>	<b>Certification Requirements Reference/Summary</b>	<b>Certifying Official</b>
Ordnance (Propellant and Explosives) Handler	NASA-STD 8719.12, Safety Standard for Explosives, Propellants, and Pyrotechnics  800-PG-8715.0.2, Training and Certification Procedures for Ordnance handlers at GSFC/WFF.	WFF Ordnance Training & Certification Committee and Chief, WFF Safety Office
Rescue Personnel: Members of the Fire Department Technical Rescue Team respond to situations where a higher level of specialized training is required for high angle and confined space rescue activities. The specific need for high angle confined space rescue has been identified as a likely risk.	Ropes Level II and Confined Space Rescue Training.	WFF Fire Department
Self-Contained Breathing Apparatus (SCBA) User: All firefighters must be proficient in wearing SCBA, as this is the first line of defense against hazards to the respiratory system.	Firefighter I and II. SCBA use is covered in Firefighter I training, the first entry level course all firefighters must take before proceeding to higher levels.	WFF Fire Department
High-pressure liquid/vapor/gas system operator	NASA-STD 8719.17, NASA Requirements for Ground-Based Pressure Vessels and Pressurized Systems (PV/S); National Consensus Standards and Codes.	WFF Pressure Systems Manager
Laser users/custodians	<ol style="list-style-type: none"> <li>1. NPR 1800.1, NASA Occupational Health Program Procedures, Chapter 4.16.</li> <li>2. ANSI Z136.1 Safe Use of Lasers.</li> <li>3. GPR 1860.2, Laser Radiation Protection for class 3B and 4 lasers.</li> <li>4. Submit safety training and experience on Goddard Form GSFC23-35LU.</li> <li>5. The Laser Safety Officer, Radiation Safety Officer, and Non-ionizing Radiation Safety Committee review and approve.</li> </ol>	Laser Safety Officer; Radiation Safety Officer; NIRSC

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<b>Safety Critical Role</b>	<b>Certification Requirements Reference/Summary</b>	<b>Certifying Official</b>
Radio Frequency (RF) operator/custodians	1. NPR 1800.1, Chapter 4.17 2. IEEE C95.1, Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz. 3. GPR 1860.3, Radio Frequency Radiation Protection. 4. Submit safety training and experience on Goddard Form GSFC23-35RF. 5. The RF Safety Officer, Radiation Safety Officer, and Non-ionizing Radiation Safety Committee review and approve.	Radio Frequency Safety Officer; Radiation Safety Officer; NIRSC
Lifting Device and Equipment (LDE) operators, riggers, and other related roles	NASA-STD 8719.9, Standard for Lifting Devices and Equipment	WFF LDE Manager

***Note: Additional safety critical roles/personnel requiring certification may be identified by the WFF Safety Office and this PG will be updated as needed.***

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<b>DIRECTIVE NO.</b>	<u>803-PG-3410.2.2</u>
<b>EFFECTIVE DATE:</b>	<u>August 29, 2013</u>
<b>EXPIRATION DATE:</b>	<u>August 29, 2020</u>

## Appendix A – Definitions

N/A

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## Appendix B – Acronyms

ABIH	American Board of Industrial Hygiene
CBT	Computer Based Training
DFO	Distance Focus Overpressure
ELV	Expendable Launch Vehicle
EOC	Emergency Operations Center
EVOV	Emergency Vehicle Operator Course
FEMA	Federal Emergency Management Agency
FSO	Flight Safety Officer
FTS	Flight Termination System
GPR	Goddard Procedural Requirements
GSO	Ground Safety Officer
IRT	Interim Response Team
LDE	Lifting Devices and Equipment
MIT	Mishap Investigation Team
MRSO	Mission Range Safety Officer
NFPA	National Fire Protection Association
NPR	NASA Procedural Requirements
NTSC	NASA Safety Training Center
OSS	Operations Safety Supervisor
PG	Procedures and Guidelines
PV/S	Pressure Vessels and Pressurized Systems
RAC	Risk Assessment Center
RCC	Range Control Center
RF	Radio Frequency
RSO	Range Safety Officer
SATERN	System for Administration, Training, and Educational Resources for NASA
SCBA	Self-Contained Breathing Apparatus
SO	Surveillance Officer
SSO	System Safety Officer
STEP	SMA Technical Excellence Program
UAS	Unmanned Aircraft Systems
WI	Work Instruction
WW	Wind Weighter
WFF	Wallops Flight Facility

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**CHANGE HISTORY LOG**

<b>Revision</b>	<b>Effective Date</b>	<b>Description of Changes</b>
Baseline	August 29, 2013	Initial Release
	August 14, 2018	Administratively Extended while revision being worked.
	August 1, 2019	Administratively extending for 1 year

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