



## **Explosive Safety Plan**

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Environmental Health and Safety  
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**REVISION HISTORY**

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Revision Number	Revision Date	Revised By	Description of Change
00	3/17/2020	Selvin McLean/Juliette Jones	Initial plan creation and implementation.
01	11/18/2020	Selvin McLean	Page numbering

## A. Introduction

Explosives are chemical compounds, mixtures or devices that will detonate or deflagrate when supplied with enough initiating energy. Furthermore, explosives do not distinguish between initiating energy supplied accidentally or deliberately. Those who handle and use explosive materials in the any process must prevent exposure of the material to accidental sources of initiating energy.

This plan pertains to Florida Tech Projects/Experiments, Events, and Emergencies. This plan doesn't pertain to Students' personal usages of select items mentioned in this plan. Students please refer to the Student Handbook section regarding - Fireworks, Weapons and Explosives (August 1, 2009) which states:

The use, possession, storage, or display of fireworks, sparklers, explosives, dangerous chemicals, explosive materials, dangerous devices capable of casting a projectile (firearms, pellet guns, paintball guns), ammunition, bows and arrows, swords or other weapons is prohibited. Other objects may be declared as weapons, depending on the context in which they are used. Objects in violation of this policy will be confiscated and destroyed. <https://www.fit.edu/policies/student-handbook/standards-and-policies/fireworks-weapons-and-explosives/>

## B. Roles & Responsibilities

Environmental Health & Safety (EHS):

- Ensure that a Risk assessment/summary is completed for any academic project that pertains to the subject of this plan;
- Review Risk assessment/summaries to ensure the following:
  - That necessary safety training has been completed;
  - A safety brief will be conducted of the potential hazards;
  - Personal protective equipment (PPE) will be in use;
  - Maps of the area with surrounding structures and location of where personnel and devices will be (Site plans fall into this area);
  - Emergency procedures and fail-safe procedures.

Responsible party (Faculty, Staff):

- Ensure that personnel are properly trained and supervised if needed if personnel do not have ample experience in the subject area;

- Ensure that all Risk assessments for Projects/Experiments/Events involving the transportation, storage, or use of explosive and/or reactive devices are submitted to the EHS Office;
- Conduct safety briefs prior to start of a project/experiments to ensure personnel are familiar with their assigned roles;
- Conduct a after action review of the what occurred during the project/experiments. If any mishaps occurred report it to the EHS Office.

Contractors:

- Comply with Occupational Safety and Health Administration (OSHA) Regulations, other Federal, State, Department of Transportation (DOT) and the National Fire Protection Association (NFPA) standards, and Florida Tech Safety Polices dealing with explosives or fireworks transportation, storage, or usage for Florida Tech activities;
- Comply with Florida Tech’s Safety Policy and Procedures; and Risk Assessment for Projects and Events Policy.

C. Access

The EHS Office is responsible for oversight of the Florida Tech Explosives Safety Plan and represents Florida Tech on all issues relating to the safety of explosives & pyrotechnics at Florida Tech activities (events/projects/experiments).

D. Facilities/Sites

Explosives storage must conform to the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) Safety Site documentation, National Fire Protection Administration (NFPA) Codes, and Occupational Safety and Health Administration (OSHA) Regulations. In addition, facilities must meet construction requirements as detailed in approved drawings including fire suppression and electrical standards, lightning protection and electrical dissipation systems, and consideration of glass hazards.

Environmental Controls: Barricades and substantial dividing walls need to be considered in the conformance evaluation.

Facilities and construction: Site plans are required for constructing new explosives facilities/sites/compartments and for constructing any facility within the explosives arc of an existing explosives facility/site/compartment.

Increased level of risk. Site plans are required when the use or remodeling of the facility/site/compartments increases the level of risk associated with the facility. Site plans are not required for remodeling or changes in use when associated with a similar or lower level of risk.

*Note: A site plan is a scaled drawing which shows the uses and structures proposed for a piece of land/site. It also includes information concerning the landscape features of a given parcel.*

#### E. Risk Management/Safety Submission

Explosive safety site planning is the risk management process associated with explosives/toxic/reactive chemical activities to ensure the minimum risk to personnel, equipment/buildings, and the environment, while meeting the university's goals. This management process also ensures that risks above those normally accepted for ammunition and explosives activities are identified and approved at the proper management level.

Please review regarding risk assessment and safety submissions for review: [ES-1003 Florida Tech's Risk Assessment for Events and Projects Policy](#).

*Note: If a project/experiment is calculated to break a 500-foot ceiling thrust hold then a Notice to the [Federal Aviation Administration \(FAA\)](#) must be submitted. This can be found in this plan in section N under forms. The title is [Fireworks Display Notification form](#). This includes projectiles such as rockets.*

#### F. Storage

*Must meet ATF and NFPA standards; and OSHA Hazard Communications Standards.*

Type-1,2, 3 (box) or 4 explosives storage magazines designed for the transfer and temporary supervised storage of explosives and detonators. These magazines are designed to be light enough for daily transport from your overnight storage area to the job site while keeping the contents safe and secure.

*At the present Florida Tech uses Type 3 storage for experimental devices.*

Recordkeeping Requirements.

Daily Summary of Magazine Transactions (DSMTs) is a running balance of explosive materials in each magazine(box) and has the following requirements:

A complete inventory of your explosive materials is required annually. This inventory shall be entered the DSMT for inspection purposes.

DSMTs must be maintained at each magazine (box) or at a central location on the premises (a separate DSMT is required for each magazine(box)).

Signage. Falls under 29 CFR 1910.109 and 27 CFR 555.109; Florida Tech's Hazard Communication Plan; and Florida Tech's Chemical Hygiene Plan.

Note: Type-1,2, 3 or 4 explosives magazines:

- Type 1. Requirements: Permanent structure; must be bullet-, fire-, weather- & theft-resistant. (See ATF Explosives Magazine Construction Requirements for further instructions)
- Type 2. Requirements: Box, trailer, semitrailer, or other mobile facility (See ATF Explosives Magazine Construction Requirements for further instructions).
- Type 3. Requirements: A "day-box" or other portable magazine for temporary, attended storage, must be fire-, weather- & theft-resistant (See ATF Explosives Magazine Construction Requirements for further instructions).
- Type 4. Requirements: Building, igloo, tunnel, dugout, box or mobile facility (See ATF Explosives Magazine Construction Requirements for further instructions).

## G. Transportation

*It is recommended that a commercial licensed and bonded carrier move materials to reduce unnecessary risk to Florida Tech personnel.*

Explosive/reactive material cannot be transported outside of approved shipping and storage containers. Packaging and packing materials will be the responsibility of the responsible party.

With any movement a detail map must be part of the risk assessment that show primary and alternate routes that will be traveled; and how emergencies will be handled during transit.

Low Explosives (used by Florida Tech).

Low explosives deflagrate producing a large volume of heated gas. Low explosives, such as black powder, most display fireworks, safety fuse, igniters, igniter cord, fuse lighters, rocket engines/re-fill kits, etc., must be stored in:

Type 1, 2, 3 or 4 permanent, portable or mobile indoor/outdoor magazines: Type-1,2, 3 or 4 explosives storage magazines(box) designed for the transfer and temporary supervised storage of explosives and detonators. These magazines are designed to be light enough for daily transport from your overnight storage area to the job site while keeping the contents safe and secure.

#### H. Unexploded Ordnance/Devices

Florida Tech personnel response when encountering Unexploded Ordnance/Devices (UXO/D)s:

1. Refrain from touching, moving, or disturbing the item in any manner.
2. If possible mark the general area without disturbing the item or creating unnecessary vibration or ground movement.
3. Move to a safe distance and call the local emergency responders 911. If using a cellular telephone move to a distance of not less than 50 feet from the item prior to making the call.
4. If possible remain in the area and guide the first arriving officials to the area of the suspected UXO/D.

Military Munitions/Unexploded Ordnance:

Historically, millions of acres of former munitions ranges were transferred from the military to be used for other purposes. These properties are formerly used defense sites (FUDS) or property transferred by the past five rounds of Base Realignment and Closure (BRAC) (i.e., 1988, 1991, 1993, 1995, 2005). The Department of Defense (DoD) is currently working to further define the inventory of sites and acreage that are potentially contaminated with military munitions and to prioritize these sites for cleanup. Environmental regulators overseeing response actions dealing with military munitions have an independent authority and/or responsibility to evaluate the public safety and environmental aspects of these response actions.

While some sites are fairly small, others may cover dozens or even hundreds of square miles in area. Ranges or other sites contaminated with military munitions may potentially have soil, ground water and surface water contamination from munitions residues (including explosives and heavy metals, and at a small number of sites, chemical warfare agents or depleted uranium). These residues may derive from partially detonated and decomposing ordnance and explosives from training activities, flares, smoke grenades, open burning and open detonation disposal activities, munitions burial sites, weapons testing or other military activities. Of course, the potential for premature



detonation of the munitions is generally the principal concern during initial response actions.

Fatalities and severe injuries have resulted from citizens accidentally exposed to military munitions or from people deliberately removing military munitions for souvenirs or other use. A number of chemical exposures with associated health effects have also been reported, some related to chemical warfare agents.

<https://www.epa.gov/fedfac/military-munitionsunexploded-ordnance>

Past UXO Incidents in Melbourne, FL:

Component Subtype	Quantity Amount	Quantity Unit	Date
C4	0	POUNDS	1/31/1990
C4	4	POUNDS	1/31/1990
DETONATING CORD	1000	FEET	1/31/1990
TNT	2	POUNDS	1/31/1990
TNT	3	POUNDS	1/31/1990

<https://www.epa.gov/sites/production/files/documents/2001uxoreport.pdf>

## I. Emergencies

With any emergency contact local responders: if able via calling 911; or Florida Tech Security at 321.674.8111 or from a campus phone if located on campus at 8111.

*Note: If you able and someone needs first aid please assist and/or get personnel out of harm's way until help arrives.*

## J. Fire Prevention

*Storage and movement of explosive/reactive material must meet or exceed NFPA/ATF guidelines:*

*Tables of distance for safe operations regarding fireworks displays - under 27 CFR, Part 555.218-219,221-224;*

*Title 27 CFR 555.219 Storage of low explosives;*

*NFPA 101: Life Safety Code;*

And [Florida Tech's Chemical Hygiene Plan](#).

Safety reminders for fireworks:

- No smoking or open flames within 50 feet of a storage or firing area;
- Restrict processing activities to designated areas.

*Note: Hot works permit are covered by a separate plan.*

#### K. Training

Please refer to Florida Tech's Safety Training webpage or contact EHS Office at [ehs@fit.edu](mailto:ehs@fit.edu) : <https://www.fit.edu/office-of-environmental-health-and-safety/safety-training/>

Personnel handling the devices/compounds the following will apply: written guidance must be available; SOPs; and safety briefs prior to any activity to ensure that all personnel know their responsibilities.

*Note: the required training for explosive/reactive devices is **Process Safety Management**.*

#### L. Pyrotechnics/Fireworks

Permit process in Brevard county (online: <http://sites.brevardcounty.us/sea#/>):

Step 1. Review/gather\* the required forms and support documents by selecting your event type below: Choose the applicable event type from the list below.

Step 2. Click the "Start Online Event Application" button to begin your online application. Note: After providing your contact information, you will receive an initial email with an application Reference Number that will enable you to pause and resume the application at a later time. Once all the event information has been entered, you will receive a 2nd confirmation email.

Step 3. Continue the online process by uploading your completed forms and support documents, or submit the required documents at a later time by one of the following methods

Step 4. Submit completed forms and support documents by one of the following methods:

1. Resume by entering reference number in the top right box "Existing Application Reference Number"

2. Mail: Planning & Development  
2725 Fran Jamieson Way A-114  
Viera, FL 32940

3. Email: [SpecialEvents@brevardfl.gov](mailto:SpecialEvents@brevardfl.gov)

4. Fax: (321) 633-2152

Step 5. Via email confirmation and update

\*The documents and forms necessary for submitting a complete application for the selected Special Event are listed below. Please download/save, print, and complete the underlined form links. Any other listed items are required support documents that you will need to provide to Brevard County.

When all required documents are completed and signed, you can scan and upload them when completing your online application, or you can send them to the County via email, mail, or fax

Required Support Documents and Forms:

- 501(3)(C) Tax Form (From the IRS (Non-Profits Only))
- Copy of Alcohol, Tobacco, And Firearms (ATF) License
- Copy of Hazardous Material Transportation Sticker
- Firework Display Site Plan (Per National Fire Protection Association, Including but Not Limited to The Location of The Firing Range, Distance from Any Structure(S), Electrical Lines, Observation Area, Designed Parking Area, Number of Parking Spaces)
- Certificate of Insurance (Naming Brevard County Board of County Commissioners as Additional Insured)
- Copy of Driver's License (For Each Individual Transporting Pyrotechnics)
- Fee Waiver Request and Financial Distribution Affidavit (Non-Profits Only)
- Fireworks Display Information Form
- Hold Harmless Agreement
- Owner Authorization Permission Letter

(Brevard County Online Special Event Permit Application Apply Online Here for a Brevard County Special Event Permit Existing Application Reference No.)

<http://sites.brevardcounty.us/sea#/>

Note: Areas of consideration when applying for a permit - Distance from building structures on campus/off campus/for experiments/events/projects etc.

#### M. References

ES-1001

[Florida Tech's Safety Policy & Procedures](#)

ES-1003

[Florida Tech Risk Assessment Policy for Projects and Events](#)

ES-1004

[Florida Tech Safety Training Policy](#)

27 CFR 555

Commerce in explosives

27 CFR 555.219

Storage of low explosives

27 CFR 555.224

Storage of display fireworks (except bulk salutes)

49 CFR Parts 100-185

Hazardous materials regulations

NFPA 1122

Code for Model Rocketry

NFPA 1123

Code for Fireworks Display

NFPA 1124

Code for the Manufacture, Transportation, and Storage of Fireworks and Pyrotechnic Articles

NFPA 1125

Code for the Manufacture of Model Rocket and High-Power Rocket Motors

NFPA 1127

Code for High Power Rocketry

NFPA 1710

Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments.

N. Forms  
FAA Notification form



U.S. Department  
of Transportation

Eastern Service Center  
Operations Support Group  
AJV-E2

1701 Columbia Ave.  
College Park, GA 30337

## **FIREWORKS DISPLAY NOTIFICATION**

Company Name: \_\_\_\_\_

Email Address of Person Submitting Request: \_\_\_\_\_

Cell Phone Number for On-Site Technician: \_\_\_\_\_

Event Name: \_\_\_\_\_

Display Date: \_\_\_\_\_ Rain Date: \_\_\_\_\_

Display Start Time: \_\_\_\_\_

Duration of Fireworks Display: \_\_\_\_\_

Max Height of Fireworks: \_\_\_\_\_

Address, City and State: \_\_\_\_\_

Latitude: \_\_\_\_\_ (North) Longitude: \_\_\_\_\_ (West)

List the Closest Public Use Airport Within 5 Nautical Miles of the Display if the Fireworks Will Reach or Exceed 500 Ft. \_\_\_\_\_

Special Notes \_\_\_\_\_

**Please email your request to:**

[9-ATO-ESA-OSG-Fireworks@faa.gov](mailto:9-ATO-ESA-OSG-Fireworks@faa.gov)