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FESHM 10170: AVIATION SAFETY POLICY AND PROCEDURES

Revision History

| Author | Description of Change | Revision Date |
|-----------------------|---|----------------------|
| <p>Chuck Morrison</p> | <ul style="list-style-type: none"> • Unmanned aircraft systems (UAS) & unmanned aerial vehicle definitions and acronyms added. • UAS by the general public at Fermilab is prohibited. • UAS commercial & Government operations at Fermilab must meet FAA & DOE requirements. • UAS hobbyist/recreational activities must meet FAA & DOE requirements, operating under the auspices of the Fermilab Barnstormers on Frelø Field. • Barnstormer President added as Assistant Aviation Safety Officer and UAS SME. • Appendix 4- Unmanned Aircraft Systems was added. | <p>March 2016</p> |
| <p>Chuck Morrison</p> | <ul style="list-style-type: none"> • Links were proved for forms and manuals. • Notifications Table was updated. • The Aviation Subcontractor Certification letter required from the CAS provider is obsolete. The Office of Aviation Mgmt provides users with names of approved CAS providers. • The Fermilab Assoc. of Rocketry no longer exists, all references were deleted. • Clarified the Reports requirement for the calendar. A reporting deadline to the Directorate was also entered. • The flow down of requirements to be added to purchase reqs is included as Appendix 3 to implement DOE O 440.2 and the Chicago Office Aviation Implementation Document. | <p>February 2014</p> |
| <p>Rafael Coll</p> | <p>Revision 1, Added FESHM Chapter formatting template and changes to the requisition/contracting of the CAS process. The flow diagram of the process was also updated.</p> | <p>December 2013</p> |

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1.0 INTRODUCTION

This policy applies to all organizations that request aviation services or sponsor events that may impact civilian aviation and those who arrange for and/or coordinate landings, over flights and passenger use of aircraft. The Directorate must approve any deviations from the policy described below.

This policy does not apply, in part or whole, to situations involving medical emergencies on site. In such cases, operational decisions (including choice of landing site) will be deferred to the discretion of the Fermilab Incident Commander. Instructions on handling medical evacuations can be found in the Fire Department emergency procedure FD-EO-320 (Medical Helicopter Evacuation Procedures).

2.0 DEFINITIONS AND ACRONYMS

2.1 DEFINITIONS

Commercial Aviation Services (CAS) – Includes leased aircraft and aircraft chartered or rented for exclusive use.

Charter Aircraft – An aircraft operated and maintained by a commercial aviation service provider that is hired by Fermilab under a contractual agreement specifying performance and a one-time exclusive use.

Crew Member – A person assigned to operate or assist in operating an aircraft during flight time. Crew members perform duties directly related to the operation of the aircraft such as pilots, co-pilots flight engineers and navigators.

Flight Crew Member – A pilot, flight engineer, flight navigator or cabin safety personnel assigned to duty in an aircraft during flight time.

FOD Walk – Foreign Object Damage Walk is an activity whereas the landing area is inspected and debris is removed prior to landing a turbine powered aircraft in order to prevent damage to the compressor blades or to bystanders.

Government Aircraft – Any (Federal or Commercial Aviation Service) aircraft owned, leased, chartered, or rented by an executive agency other than a branch of the Armed Forces or an intelligence agency.

Mission - The objective that must be accomplished by the chartered flight. Anticipated Fermilab missions are aerial photography of the site and aerial surveillance of the deer population.

Passenger – Any individual on-board an aircraft who is not a flight crewmember, crewmember, or qualified non-crewmember.

Qualified Non-Crew Member - A person flying onboard a Government aircraft whose skills, duties or expertise are essential to performing, or associated with performing the (non-travel related) Governmental mission requirement for which the aircraft was dispatched. Qualified non-crew

members may be researchers, electronic technicians, system operators, photographers, emergency medical personnel, biologists, etc.

Unmanned Aircraft Systems & Unmanned Aerial Vehicles – Colloquially known as a drone, is an aircraft without a human pilot on board. Its flight is controlled either autonomously by computers in the vehicle or under the remote control of a pilot on the ground or in another vehicle.

2.2 ACRONYMS

ASO - Aviation Safety Officer

CAS - Commercial Aviation Services

CFR - Code of Federal Regulations

ETA - Estimated Time of Arrival

PDF - Portable Document Format

TOT - Time On Top

UAS - Unmanned Aircraft Systems

UAV - Unmanned Aerial Vehicles

WSS - Work Smart Set

3.0 RESPONSIBILITIES

3.1 Chief Safety Officer

- Provides management and implementation of DOE Aviation Safety Orders and Standards as provided in the Necessary and Sufficient Work Smart Set.
- Appoints the Aviation Safety Officer

3.2 Aviation Safety Officer & Assistant Aviation Safety Officer

- Submit quarterly reports to the Fermi Site Office detailing aviation activities for quarters where aviation missions were flown that are subject to these reporting requirements.
- The President of the Fermilab Barnstormers radio control model club, Academy of Model Aeronautics Charter #616 shall serve as Assistant Aviation Safety Officer.

4.0 PROCEDURES

4.1 Approvals

- a. Any organization that arranges for, or coordinates the use of aircraft will initiate and complete a [Flight Request and Mission Profile \(EZ\) form](#) and shall comply with all lead times as specified on the form. This form can be obtained from the ESH&Q Section web page DocDB link as a PDF file. This form also identifies mission flight hazards and provides controls. The mission details will be evaluated by the Fermilab ASO, reviewed by the Chief Safety Officer and submitted for approval to the Director. Once approved by the Director, the form shall be forwarded to the DOE-FSO Office for a final approval. Upon their approval, the purchase of CAS may occur.
- b. Once completed, the form must be forwarded to ESH&Q Admin at MS-119 (WH7E) for processing. See the Appendix 1- Aviation Mission Flow Chart at the end of this chapter for a pictorial of the process.

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- c. ESH&Q Section Admin will post all directorate approved missions in PDF to the ESH&Q web page under DocDB Document #434 and will notify all parties that a new mission profile is posted using the avops@fnal.gov computer distribution list.

4.2 Notifications

Any organization who arranges for, or coordinates the use of aircraft shall notify various groups of the impending operation. Notification shall be made as soon as the requester receives the information and as late as three hours before TOT. Provide mission profile, type of aircraft and estimated time of arrival of the aircraft \pm one hour. See the Notification Table below or alternatively, an e-mail message may be sent to avops@fnal.gov. This computer distribution list resides in the list server and will deliver your message to the same organizations listed in the Notification Table below.

| Office | Email/Phone number or extension |
|-------------------------------|---|
| | |
| DOE- Fermi Site Office | John.scott@ch.doe.gov /Ext. 3281 |
| Fermilab Fire Department | Ext. 3428 |
| Communication Center/Security | Ext. 3414 |
| ESH&Q Section Admin | ESH_Admin@fnal.gov / Ext. 5811 |
| Office of Communications | Ext. 3351 |

4.3 Aviation Service Purchase Order Preparation

Before entering into a purchase order to charter aircraft of any type from a CAS provider, the selected service must be authorized by the DOE Office of Aviation Management. The name of the aviation services provider must appear in the list of providers found in the spreadsheet. The latest spreadsheet can be found published in the DOE-HQ Aviation Management Office website. This applies to providers operating under 14CFR Part 91 and 135 but excludes scheduled air carriers operating under 14 CFR Part 121.

Note: Third party CAS providers are included even though Fermilab may not have a direct business relationship or a direct contract for the purchase of services. For example, a photographer is hired by Fermilab who in turn hires a CAS provider. The CAS provider must be in the authorized US DOE list.

- a. Unless otherwise specified, all aviation operations purchased will be conducted during daylight hours and will strictly adhere to, and comply with, VFR FAA Regulations.
- b. Before mission operations commence, the person responsible for the aviation charter-service purchase will obtain the model of the aircraft, name of the aircraft operator and telephone number, name of the pilot in command and the estimated time of arrival at Fermilab. This will allow for any last minute coordination in case of changing conditions.
- c. Fermilab employees, users and visitors will not ride as passengers in aircraft doing work for Fermilab or a Fermilab subcontractor unless previously authorized as “essential” by the Directorate. List mission essential employees by name and employee number in the back of Form F10170/1 in the space provided for DOE ASSOCIATED PERSONS ON BOARD.

- d. All Fermilab employees who are qualified non crewmembers and on chartered aircraft will be required to receive a passenger safety briefing given by the Pilot-in-Command (PIC) prior to flight. See requirements flow down in Appendix 3.
- e. When Procurement places a purchase order that includes the use of a helicopter, every attempt shall be made to make use of the nearby DuPage Airport facility and avoid landings and take-offs from the Fermilab site unless prior authorization is granted by the Directorate with the approval of the Flight Request and Mission Profile form.
- f. The purchase order will include a copy of the Flight Request and Mission Profile (EZ) form and Appendix 3 requirements. Purchase order will be sent to DOE-FSO for final approval before it is returned to Procurement to complete the purchase of the services.

5.0 DESIGNATED LANDING SITE

There are no facilities to land fixed wing aircraft at Fermilab. Such operations will utilize the facilities of one of several local municipal airfields.

The Anthony Frelø Field, commonly called the Barnstormers Field on Old Batavia Road, geographical coordinates N41° 51' 03" x W88° 15' 25", is designated as the Fermilab helicopter landing site. A secondary landing site is the paved area or grassy strip east of the Firehouse, where enhanced firefighting capabilities are available. For safety and support reasons, only the designated locations described in this procedure are to be used for helicopter landings and take-offs other than landings for Medevac training as stated under Section 6.0 of this procedure.

Emergency Medevac helicopters can land on any open area on Fermilab property designated by the Incident Commander to expedite extrication of an injured party. All safety procedures must be observed. Close coordination between the Fire Department and the Security Department is of the utmost importance to protect bystanders and other vehicular traffic during the resolution of the emergency.

6.0 HELICOPTER MEDEVAC TRAINING FOR FIRE DEPARTMENT PERSONNEL

Periodically, Fire Department personnel require refresher training on Medevac procedures for seriously injured patients. This training is designed to hone skills in landing, loading and coordination/assistance to flight medical personnel. This is accomplished by arranging visits from the various air ambulance services that operate in the Chicagoland area such as Rush-Presbyterian, the University of Chicago system and the Northern Illinois Medical Center. Fermilab supports and encourages these visits.

Note: The Fire Chief is given blanket authorization to arrange for Medevac visits as necessary and to land a helicopter on the field or roadway adjacent to the fire station, in lieu of the Flight Request process, as long as the following conditions are met:

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- a. Flight conditions must be VFR (Visual Flight Rules).
- b. The Fermilab Fire Chief or Battalion Chief will make notifications using the contacts in the Notifications Table as soon as the information becomes available (See requirements under the NOTIFICATIONS paragraph).
- c. No Fermilab employee is allowed to ride on the helicopter unless specifically authorized in writing by the Directorate.
- d. The Communication Center will notify Security.
- e. If the mission profile changes due to weather or other external emergencies notification must be made again to the Communication Center as soon as the change occurs. The Communication Center will then notify Security of the change in mission profile.
- f. Preparation for on-site helicopter landings and take-offs- The Fermilab ESH&Q Guideline Appendix 2- "Helicopter Landings SOP" at the end of this chapter will be followed in preparation for helicopter landings and take-offs.

7.0 OFFICE OF COMMUNICATIONS

When contacted by news organizations, helicopter or fixed wing aircraft flights by these or other organizations wishing to loiter over Fermilab airspace must be made aware of Notice to Airmen (NOTAM) FDC 4/0811. This NOTAM advises pilots to avoid the airspace above, or in proximity to sites such as power plants (Nuclear, Hydro-Electric or Coal), Dams, Refineries, Industrial Complexes, Military Facilities and other similar facilities. Fermilab is considered an industrial complex.

Loitering may trigger an intercept by military aircraft. If intercepted, pilots must follow the procedures in the FAA Airman Information Manual (AIM) Chapter 5, Section 6, Paragraph 5-6-2. It is recommended that these operators maintain radio contact with the nearest Flight Service Station or air traffic control facility and advise them of their activities to avoid a possible intercept.

8.0 REPORTS

8.1 Commercial Aviation Services User

Once the aviation services are provided and paid for, the requester shall forward to the Aviation Safety Officer MS-326 (Site 52, Security) a report with the data elements stated below, a copy of the purchase requisition and a copy of the invoice from the CAS provider:

| Data Element | Definition |
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| (m)= mandatory data element. All other elements may be reported if the information is available. | |
| Agreement Begin Date (m) | Date on which the type of service that includes use of charter aircraft, contract aircraft, rental aircraft, and related |

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| | activities in support of an executive agency, starts. |
| Agreement Comment | Relevant remarks which add clarifications to the aircraft CAS Cost and Hours Flown information. |
| Agreement End Date | Date on which the type of service that includes use of charter aircraft, contract aircraft, rental aircraft, and related activities in support of an executive agency, ends. |
| Agreement Number | Reference number for the type of service that includes use of charter aircraft, contract aircraft, rental aircraft, and related activities in support of an executive agency. |
| Agreement Type (m) | Indicates the type of commercial aviation service in support of an executive agency, i.e. charter, full service contract, rental, ISSA, and lease. |
| Flight Time (m) | The amount of time, expressed in hours and tenths of an hour, from when the aircraft moves under its own power for the purpose of flight and ends when the aircraft comes to rest after landing. |
| Alert Ground Utilization Time (new) | <p>That time, expressed in hours and tenths of an hour, an Alert Aircraft is:</p> <ol style="list-style-type: none"> 1. Airworthy and not being utilized to meet other program needs, 2. Not undergoing any maintenance (including inspection), modification, testing, calibration or alteration. <p>Alert Aircraft: An operational government aircraft that is configured (including any mission equipment) and dedicated to meet a mission that requires a rapid response with a flight crew and essential personnel, if applicable, readily available for departure.</p> |
| In-House Cost | Operating expenses provided by the using Government agency that benefits from the commercial service, such as pilot and fuel expenses. For ISSA agreement, in addition to reporting the in-house costs, the benefiting (operating) agency/bureau must report all costs (fuel, crew, etc.) incurred to the owning agency/bureau that, in turn, will report these costs to FAIRS. |

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| ISSA Vendor Agency | Identifies any executive department or independent establishment in the executive branch of the Government, including any wholly owned Government corporation, which is providing the service, i.e., the ISSA provider (Federal). (Only use for agreement type, ISSA) |
| ISSA Vendor Bureau/Office/Service | Identifies the reporting subunit within the executive agency, i.e., the ISSA provider. |
| Manufacturer (m) | Identifies the original manufacturer of the aircraft as designated on the aircraft data plate. |
| Mission (m) | Represents the principal purpose for which the aircraft was dispatched. One mission may be designated per sortie (one take-off and landing). |
| Model (m) | Identifies the model of the aircraft as designated on the aircraft data plate. |
| Paid-Out Cost (m) | Operating expenses paid out to commercial or other Government agency providers of the CAS. Paid-out costs include operations and administrative overhead costs allocated to the CAS. |
| Registration Mark | 3. Identifies the unique identification mark--usually numbers and letters--displayed on Government aircraft (including foreign aircraft hired as CAS). "Tail number" is commonly used for "registration mark". For Fermilab purposes use the aircraft registration number. |
| Report Period Begin Date (m) | 4. Beginning date of the period for which the CAS or Fleet Aircraft cost and hours flown data are submitted. This is the date for which agency costs begin to accrue, regardless of ownership or other agency use. |
| Report Period End Date(m) | Ending date of the period for which the CAS or Fleet Aircraft cost and hours flown data are submitted. This is the date for which agency costs cease to accrue, regardless of when paid or disbursed. |
| Vendor Name | Name of vendor hired to perform mission. |

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| Vendor Location | Location of vendor hired to perform mission. |
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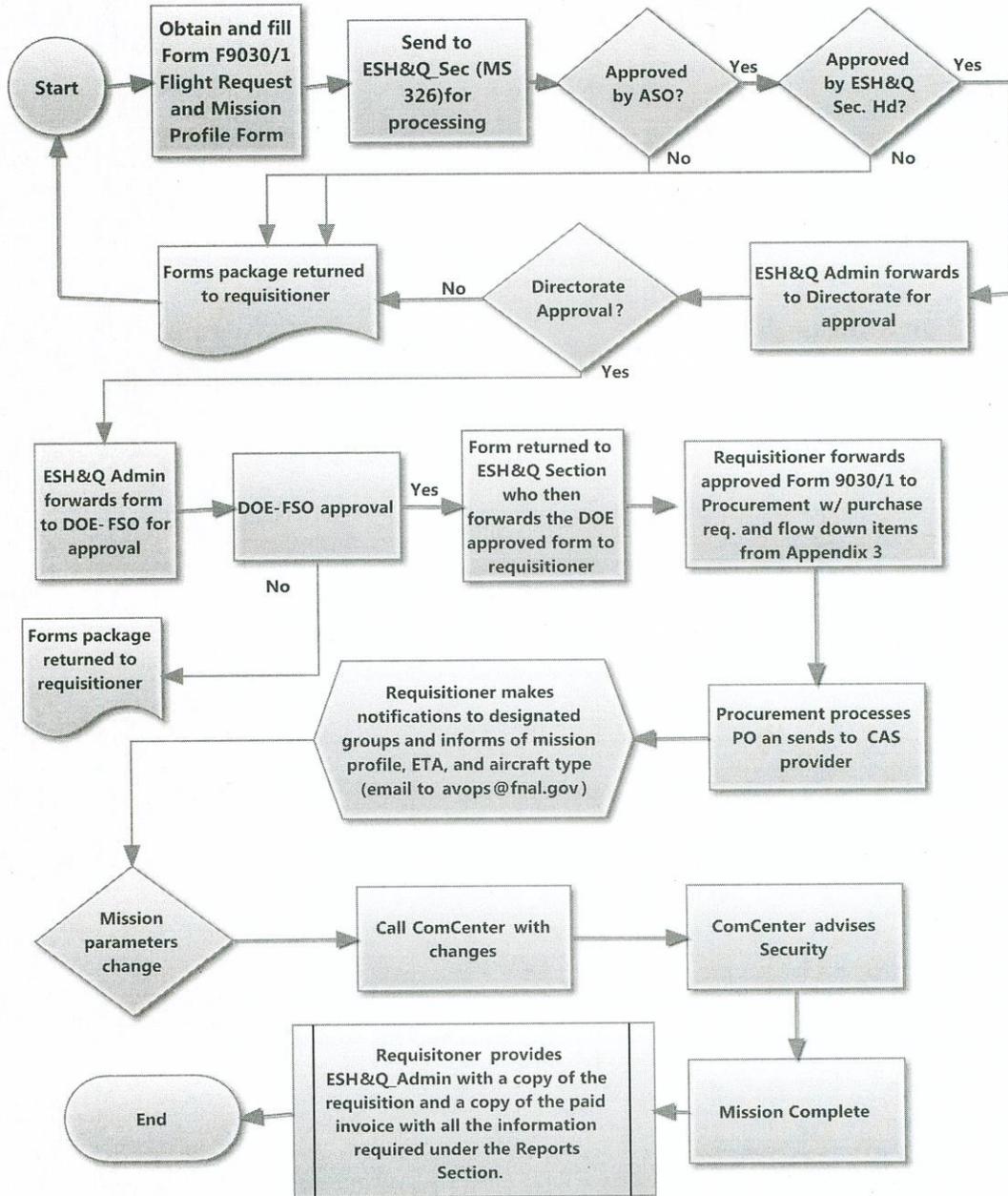
8.2 Aviation Safety Officer Reports

The Aviation Safety Officer will submit quarterly reports to the DOE- Fermi Site Office detailing aviation activities for the prior three months. Quarterly reports are based on fiscal year quarters. These reports are due to the Directorate within seven (7) calendar days after the quarter ends. **Only quarters where aviation missions were flown are subjected to these reporting requirements.**

9.0 OTHER RELATED DOCUMENTS AND DIRECTIVES

- DOE O 440.2 Series- Aviation Management and Safety
- [DOE CAS Providers Approved List](#)

10.0 APPENDIX 1- AVIATION MISSION PROFILE FLOW DIAGRAM



11.0 APPENDIX 2- HELICOPTER LANDINGS STANDARD OPERATING PROCEDURE (SOP)

1. Purpose

To establish and coordinate support operations for implementing the Fermilab Aviation Safety Policy.

2. Scope

These procedures outline the responsibilities of Fire, Security and Communication Center personnel as they relate to helicopter routine overflights, landings and take-offs at the Fermilab site.

3. Designated Landing Sites

The Anthony Frello Field, commonly called the Barnstormers Field, on Old Batavia Road, geographical coordinates N41°51' 03"x W88° 15' 25", is designated as the preferred Fermilab helicopter landing site. A secondary site is the paved road in front of the Fermilab Fire House or the grassy area located immediately east of the fire house.

4. Operational Responsibilities

- a. When notified of a planned helicopter landing, the Fermilab employee who requested the services will advise the Communication Center of the details of the operation.
- b. The Communication Center will notify the Security group.
- c. The Fire Department On-Duty Battalion Chief will detail a minimum of one firefighting vehicle, a driver and a firefighter to be present at the helicopter landing site 15 minutes before the scheduled landing and at all times during take-offs. When landing on the grassy area east of the firehouse, the Fire Department Battalion Chief with the assistance of the Security detail will ensure the area is clear of any Foreign Objects that may cause injury to personnel or damage to the helicopter turbine/s (FOD) if blown by the helicopter downwash during landing or takeoff.

5. Security Department SOPs

- a. A minimum of two security officers will be detailed to the landing site during all routine helicopter landings and take-offs to enforce ground safety requirements and control traffic and pedestrians as necessary.
- b. The Shift Lieutenant shall conduct a FOD walk of the landing site with the Fire Department no more than one hour nor less than one-half hour prior to a scheduled landing.

12.0 APPENDIX 3- FLOW DOWN OF REQUIREMENTS FOR COMMERCIAL AVIATION SERVICE (CAS) PROVIDER PURCHASE ORDER

The flow down of requirements in the box below shall be part of the purchase order that is sent to the CAS provider and implements DOE O 440.2 Series- Aviation Management and Safety and the DOE Chicago Office Aviation Implementation Document (AID).

1) (Insert name of Commercial Aviation Services provider) will comply with 14 CFR Chapter I; 40 CFR Subtitle B Chapter I; and 49 CFR, Subtitle B, Subchapter C, Chapter XII, while in service to DOE or its contractors, and any other laws and regulations that pertain to the type of operation conducted.

2) The Pilot in Command (PIC) will ensure that the aircraft is operated within the manufacturer and FAA weight and balance limitations for which the aircraft will be operated.

3) The Anthony Frello Field, commonly called the Barnstormers Site, on Old Batavia Road, geographical coordinates N41°51' 03"x W88° 15' 25", is designated as the preferred Fermilab helicopter landing site. A secondary site is the paved road in front of the Fermilab Fire House or the grassy area located immediately east of the fire house. These two fields are only to be used for emergency purposes if time and the nature of the emergency allows. Otherwise, any area of Fermilab may be used to provide a safe landing for the aircraft, crew, passengers or qualified non-crewmembers at the discretion of the PIC. Otherwise the (insert name of local airport) airport will be used for takeoff and landings under normal circumstances.

4) Passenger manifests will be prepared for all flights carrying DOE and/or contractor personnel aboard an aircraft as a passenger, or a qualified non-crewmember. As a minimum, the Passenger manifests will include the full name of each reportable individual for carried during the flight and a telephone number of an emergency contact.

5) The PIC shall provide a passenger safety briefing that meets the requirements set forth in 14 CFR Part 135.117, and that there is a process for informing personnel of their rights established in the NTSB/SPC-99-04, *Federal Plan for Aviation Accidents Involving Aircraft Operated by or Chartered by Federal Agencies*, Appendix F, "Disclosure for Civilians Traveling Aboard Federal Government Aircraft".

6) The CAS will comply with all applicable FAA civil aircraft regulations.

13.0 APPENDIX 4- UNMANNED AIRCRAFT SYSTEMS

Unmanned Aircraft Systems (UAS) are aircraft subject to regulation by the FAA to ensure safety of flight, and safety of people and property on the ground. Incidents involving unauthorized and unsafe use of small, remote-controlled aircraft have risen dramatically. The FAA is taking an incremental approach to safe UAS integration as the agency acquires a better understanding of operational issues such as training requirements, operational specifications and technology considerations.

1. UAS operations by the general public at Fermilab is strictly prohibited.
2. UAS operations funded and operated by FRA personnel must meet the requirements of the FAA and be approved by DOE Headquarters, via the DOE Fermi Site Office.
3. UAS operations by commercial entities at Fermilab must meet the requirements of the FAA and be approved by DOE Headquarters, via the DOE Fermi Site Office.
4. UAS operations by the Fermilab Barnstormers and their approved guests must meet the requirements of the FAA for hobby/recreational flying and be conducted at Frelo Airfield on Old Batavia Road, geographical coordinates N41°51' 03"x W88° 15' 25".
5. The careless, reckless or unauthorized use of UAS's at Fermilab will be reported to local law enforcement. Notification of an incident, accident or other suspected violation will be made to the FAA Central Regional Operation Center at 817-222-5006, 9-asw-operation-center@faa.gov.