



Environmental Review Form for Argonne National Laboratory

Form:	ANL-985
Version:	4
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Created By:	Rodi, Diane J.

Creator

Badge:	53199	Name:	Rodi, Diane J.
Cost Center:	279	Division:	CLS
Job Title:	ALD ESH/QA Coordinator	Employee Type:	Regular Full-Time Exempt
Building:	240	Lab Extension:	2-1617

General Information

Project/Activity Title: On Site Use of UASs for Research Applications and Site Inspections

ASO NEPA Tracking No.:	Type of Funding:
B & R Code:	Identifying Number: N/A
SPP Proposal Number:	CRADA Proposal Number:
Work Project Number:	ANL Accounting Number: (Item 3a in Field Work Proposal)
Other (explain):	

List appropriate NEPA Owners:
Division: EVS NEPA Owner:

Cost Code

Task: Center: Project: Activity:

Description of Proposed Action

Argonne National Laboratory (Argonne) wishes to use small unmanned aircraft systems (UAS) for a variety of experimental and inspection applications. These will include both fixed-wing unmanned aircraft (UAS) as well as multi-copter UAS that are each less than or equal to 55 pounds in weight. All UAVs will be constructed from commercially available light weight airframes and may be modified to carry small experimental equipment (i.e. sensors, hyperspectral cameras, etc.).

Description of Affected Environment

Operations of the UASs will be from ground level (GL) to 700 ft above ground level (AGL)/1450 mean sea level (MSL) in uncontrolled Class G air space beneath the Class B air space of Chicago's O'Hare international Airport (ORD). All operations will remain inside the Argonne perimeter fence and in non-congested areas during business hours. Operations of fixed-wing aircraft will launch and recover from designated appropriate cleared fields and prepared R/C runways suitable for such. Operations of multi-rotor aircraft will be more varied and include cleared industrial roof-tops and parking lots during non-business days. All of these operational tests are intended to develop advanced scientific capabilities, safety protocols, and operating crew training methods, as well as reduce risk and cost of relatively inaccessible location inspections. Planned routine operations will be between 50 ft AGL/800 ft MSL and 700 ft AGL/1450 ft MSL for fixed-wing aircraft and will be between 10 ft AGL/760 ft MSL and 700 ft AGL/1450 ft MSL for multi-copters. Detailed UAS specs and flight plans provided in attachments. All work will be carried out within the requirements of LMS-POL-8 Aviation Management and Safety and LMS-PROC-261 Aviation Safety. This project has been submitted to the DOE Office of Aviation Management through the site wide SME for aviation safety and Argonne Site Office and has acquired a COA (Certificate of Authorization) from the FAA. All UASs will be operated beneath the 1,700 foot shelf AGL (above ground level) of the O'Hare Class B airspace and below the transitioning air space for Brookeridge Airpark in Downers Grove. An administrative limit of 700 feet AGL will be imposed on all UAV flights. To satisfy FAA [UAS] FSIMS 8900.1 Volume 16 Section 16-5-3-5G any Argonne UAS pilot in command (PIC) will have a pilot's license. At least one of the crew members (PIC or Observer) will have the appropriate FCC certification for the applicable radio frequency being used by the UAS. This will allow usage of each of the frequencies employed by the Argonne UASs for experiments. To satisfy FAA FSIMS 8900.1 Volume 16 Section 16-4-4-1B, ground-based visual observers (VOs) will be trained and used to assist the pilot in command (PIC). Collision with birds will be minimal as birds are likely to avoid the UAVs due to their similarity of appearance to natural predators and Canada Geese generally fly at an altitude of 500 to 1,700 feet AGL.

Potential Environmental Effects

- Attach explanation for each "yes" response near bottom of form.
- **See Instructions for Completing Environmental Review Form.**

Section A (Complete For All Projects)		Yes	No	Explanation
1.	Project evaluated for Pollution Prevention and Waste Minimization opportunities and details provided under items 2, 4, 6, 7, 8, 16, and 20 below, as applicable	<input checked="" type="radio"/>	<input type="radio"/>	Explanation below under hazardous waste section.
2.	Air Pollutant Emissions	<input type="radio"/>	<input checked="" type="radio"/>	
3.	Noise	<input checked="" type="radio"/>	<input type="radio"/>	Although all UASs emit nuisance noise within a short radius of the unit, this impacts only equipment operators. Mission traffic patterns are located over low population areas of the campus during working hours to minimize impact to workers.
4.	Chemical/Oil Storage/Use	<input type="radio"/>	<input checked="" type="radio"/>	
5.	Pesticide Use	<input type="radio"/>	<input checked="" type="radio"/>	
6.	Toxic Substances Control Act (TSCA) Substances			
6a.	Polychlorinated Biphenyls (PCBs)	<input type="radio"/>	<input checked="" type="radio"/>	
6b.	Asbestos or Asbestos Containing Materials	<input type="radio"/>	<input checked="" type="radio"/>	
6c.	Other TSCA Regulated Substances	<input type="radio"/>	<input checked="" type="radio"/>	
6d.	Import or Export of Chemical Substances	<input type="radio"/>	<input checked="" type="radio"/>	
7.	Biohazards	<input type="radio"/>	<input checked="" type="radio"/>	
8.	Effluent/Wastewater (If yes, see question #12 and contact Peter Lynch (FMS-SEP) at 2-4582 or lynch@anl.gov)	<input type="radio"/>	<input checked="" type="radio"/>	
9.	Waste Management			
9a.	Construction or Demolition Waste	<input type="radio"/>	<input checked="" type="radio"/>	
9b.	Hazardous Waste	<input checked="" type="radio"/>	<input type="radio"/>	UASs run on rechargeable batteries, mostly of the Li variety. All spent batteries owned by Argonne will be sent out for recycling through the site recycling program when an option; sent out as hazardous waste if not.
9c.	Radioactive Mixed Waste	<input type="radio"/>	<input checked="" type="radio"/>	
9d.	Radioactive Waste	<input type="radio"/>	<input checked="" type="radio"/>	
9e.	PCB or Asbestos Waste	<input type="radio"/>	<input checked="" type="radio"/>	
9f.	Biological Waste	<input type="radio"/>	<input checked="" type="radio"/>	
9g.	No Path to Disposal Waste	<input type="radio"/>	<input checked="" type="radio"/>	
9h.	Nano-material Waste	<input type="radio"/>	<input checked="" type="radio"/>	
10.	Radiation	<input type="radio"/>	<input checked="" type="radio"/>	
11.	Threatened Violation of ES&H Regulations or Permit Requirement	<input checked="" type="radio"/>	<input type="radio"/>	The Argonne aviation safety SME has flagged this project as requiring a COA (certificate of operation) from the FAA, which has been obtained.
12.	New or Modified Federal or State Permits	<input checked="" type="radio"/>	<input type="radio"/>	The Argonne aviation safety SME has flagged this project as requiring a COA (certificate of operation) from the FAA, which has been obtained.

13.	Siting, Construction, or Major Modification of Facility to Recover, Treat, Store, or Dispose of Waste	<input type="radio"/>	<input checked="" type="radio"/>	
14.	Public Controversy	<input checked="" type="radio"/>	<input type="radio"/>	There has been significant media attention recently regarding the extent to which UASs may interfere with homeowner Fourth Amendment rights. The FAA-approved operational area for this project is laid out in the attached COA on page 15 and will not interfere in any private property rights.
15.	Historic Structures and Objects	<input type="radio"/>	<input checked="" type="radio"/>	
16.	Disturbance of Pre-existing Contamination	<input type="radio"/>	<input checked="" type="radio"/>	
17.	Energy Efficiency, Resource Conserving, and Sustainable Design Features	<input type="radio"/>	<input checked="" type="radio"/>	
Section B (For Projects that Occur Outdoors)		Yes	No	
18.	Threatened or Endangered Species, Critical Habitats, and/or other Protected Species	<input type="radio"/>	<input checked="" type="radio"/>	
19.	Wetlands	<input type="radio"/>	<input checked="" type="radio"/>	
20.	Floodplain	<input type="radio"/>	<input checked="" type="radio"/>	
21.	Landscaping	<input type="radio"/>	<input checked="" type="radio"/>	
22.	Navigable Air Space	<input checked="" type="radio"/>	<input type="radio"/>	All unmanned aviation systems (UASs) will be operated beneath the 1,700 foot shelf AGL (above ground level) of the O ₂ Hare Class B airspace and below the transitioning air space for Brookeridge Airport in Downers Grove. An administrative limit of 700 feet AGL will be imposed on all UAS flights. Risk mitigation strategies are outlined in the attached UAS Operations and Procedures Manual. A meeting has been held with Brookeridge Airport officials to obtain feedback on this scope of work and arrange future communication pathways.
23.	Clearing or Excavation	<input type="radio"/>	<input checked="" type="radio"/>	
24.	Archaeological Resources	<input type="radio"/>	<input checked="" type="radio"/>	
25.	Underground Injection	<input type="radio"/>	<input checked="" type="radio"/>	
26.	Underground Storage Tanks	<input type="radio"/>	<input checked="" type="radio"/>	
27.	Public Utilities or Services	<input type="radio"/>	<input checked="" type="radio"/>	
28.	Depletion of a Non-Renewable Resource	<input type="radio"/>	<input checked="" type="radio"/>	
Section C (For Projects Outside of ANL)		Yes	No	
29.	Prime, Unique, or Locally Important Farmland	<input type="radio"/>	<input type="radio"/>	
30.	Special Sources of Groundwater (such as sole source aquifer)	<input type="radio"/>	<input type="radio"/>	
31.	Coastal Zones	<input type="radio"/>	<input type="radio"/>	
32.	Areas with Special National Designations (such as National Forests, Parks, or Trails)	<input type="radio"/>	<input type="radio"/>	
33.	Action of a State Agency in a State with NEPA-type Law	<input type="radio"/>	<input type="radio"/>	
34.	Class I Air Quality Control Region	<input type="radio"/>	<input type="radio"/>	

Categorical Exclusion

ANL NEPA Reviewer Use Only

- My approval is the final approval necessary
- This form requires additional approval from DOE

Attachments

- File Description:** FAA COA [View Attachment](#)
- File Description:** Ops Procedures Manual [View Attachment](#)
- File Description:** Cover Memo to J. Livengood from P. Kearns [View Attachment](#)
- File Description:** ERF Section D completed by DOE ASO [View Attachment](#)
- File Description:**

Comments

Please view the attached Cover Memo to J. Livengood from P. Kearns above. DOE ASO and DOE CH approved this ERF (ASO-CX-322) under the Subpart D, Appendix B, B3.2 Aviation activities. The approved ERF is ASO-CX-322.

Add Approver

Approver Name	Approver Badge	Reason	Delete
Gartman, David M.	35052	Manager of program	

Notifications

The approval notification email will be copied to the people listed below.

Badge	Name	Division	Delete
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ASO-CX Number

ASO-CX-

Comments:

Approval

<u>Approver</u>	<u>Action</u>	<u>Date Routed</u>	<u>Action Date</u>	<u>Approval Reason / Comments</u>	<u>Approval Type</u>
Rodi, Diane J.	APPROVED	2015-12-18	2015-12-18 14:21:59.0	Creator :	PRIMARY
Rodi, Diane J.	APPROVED	2015-12-18	2015-12-18 14:21:59.0	Project Manager :	PRIMARY
Gartman, David M.	APPROVED	2015-12-18	2015-12-18 15:14:42.0	Manager of program :	PRIMARY
Rodi, Diane J.	APPROVED	2015-12-18	2015-12-18 14:21:59.0	NEPA Owner Approval for Argonne Environmental Review :	PRIMARY
Stauber, Joel V.	APPROVED	2015-12-18	2015-12-18 15:33:59.0	ANL NEPA Reviewer :	PRIMARY
Hellman, Karen B.	APPROVED	2015-12-18	2015-12-18 15:47:17.0	ANL-985 Review and Approval :	PRIMARY
Stine, Gail Y.	APPROVED	2015-12-18	2015-12-21 10:32:48.0	ANL-985 Review and Approval :	PRIMARY
Kearns, Paul K.	APPROVED	2015-12-21	2015-12-21 14:42:54.0	ANL-985 ANL COO Review and Approval :	PRIMARY
Joshi, Kaushik N.	APPROVED	2015-12-21	2015-12-22	ANL-985 DOE-ASO Review and	PRIMARY

Siebach, Peter R.

APPROVED 2015-12-22

15:26:31.0

2015-12-24
10:34:20.0

Approval : **This approved ERF
is ASO-CX-322.**

ANL-985 DOE NEPA Compliance
Officer Review and Approval :

PRIMARY
