

PMC-ND

(1.08.09.13)

**U.S. DEPARTMENT OF ENERGY
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
NEPA DETERMINATION**



RECIPIENT: NREL

STATE: CO

PROJECT TITLE : Red Mountain Scientific Drone Flights at NWTC; Tracking No. 18-006

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
	DE-AC36-08GO28308	NREL-18-006	GO28308

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Order 451.1A), I have made the following determination:

CX, EA, EIS APPENDIX AND NUMBER:

Description:

B3.2 Aviation activities	Aviation activities for survey, monitoring, or security purposes that comply with Federal Aviation Administration regulations.
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Rationale for determination:

The U.S. Department of Energy's (DOE) National Renewable Energy Laboratory (NREL), in collaboration with Red Mountain Scientific (RMS), propose to conduct drone flights to develop and test autonomous robotic vision tracking for use in wind turbine blade inspection. NREL's role would be to provide the testing location and Red Mountain would provide the operators and drones (UAV).

Project activities would be conducted at NREL's National Wind Technology Center (NWTC), located southeast of the intersection of Colorado Highway (CO) 93 and CO-128, in Jefferson County, Colorado. The NWTC is a federally-owned facility that consists of 305 acres and is primarily utilized for wind energy research, development, and testing. Project research would take place around the NW100 turbine at site 1.2 in Row 4. All flights would be within a 150m radius of the wind turbine at all times. Flight paths would be less than 30 meters above the tip height of the highest blade which would be in a locked "rabbit ears"/maintenance position.

Researchers propose to conduct up to six flight-days, with multiple flights occurring on each day. Flights would be conducted using a DJI Phantom 4 Pro weighing approximately five pounds. Flights would be under the direct supervision of an FAA Part 107 certificated remote pilot at all times. This pilot would command a team of two spotters and another remote pilot. Approval to conduct flights has been granted by DOE Aviation Management office for a 60-day period, commencing February 20, 2018.

Flights would occur in the Rocky Mountain Metropolitan Airport class D airspace under an approved FAA exception (request number 2017-P107-WSA-19950). All flight activities would be in accordance with FAA and DOE requirements (DOE O 440.2C and 14 CFR Part 107).

A risk assessment would be completed for each flight-day considering mission intent and current/forecast weather conditions, and operational parameters would be identified and set forth in a Safe Work Permit. Flight staff would wear hard hats, safety glasses, and long-sleeved clothing.

The noise level of the drone is approximately 77dB. At 100 feet from the drone the noise level is approximately 46 dB. These levels are significantly less than the OSHA TLV of 90 dB and the DOE/ACGIH limit of 85 dB. Due to the short duration of each flight and distance of receptors (people or wildlife) to the drone, noise impacts are not anticipated.

Project activities would not affect cultural resources, threatened or endangered species, wetlands, floodplains, or prime farmlands. No construction or ground disturbing activities are being proposed. By following the provisions of Red Mountain Scientific's FAA COA and the provisions listed below, no impact to aviation airspace would occur.

Based on the review of the proposal, DOE has determined the proposal fits within the class of action(s) and the integral elements of Appendix B to Subpart D of 10 CFR 1021 outlined in the DOE categorical exclusion(s) selected above. DOE has also determined that: (1) there are no extraordinary circumstances (as defined by 10 CFR 1021.410(2)) related to the proposal that may affect the significance of the environmental effects of the proposal; (2) the proposal has not been segmented to meet the definition of a categorical exclusion; and (3) the proposal is not connected to other actions with potentially significant impacts, related to other proposals with cumulatively significant actions, or an improper interim action. This proposal is categorically excluded from further NEPA review.

Project activities are subject to conditions as listed below.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

If the Recipient intends to make changes to the scope or objective of this project, the Recipient is required to contact the Project Officer, identified in Block 15 of the Assistance Agreement before proceeding. The Recipient must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved. If the Recipient moves forward with activities that are not authorized for Federal funding by the DOE Contracting Officer in advance of a final NEPA decision, the Recipient is doing so at risk of not receiving Federal funding and such costs may not be recognized as allowable cost share.

Insert the following language in the award:

You are required to:

The following conditions apply to project activities and personnel and associated activities:

* DOE Office of Aviation Management has issued a 60-day approval for UAS activities to take place at the NWTC. This approval is effective February 20, 2018. Flights are prohibited past April 20, 2018. If additional time is required, an extension from DOE must be approved and a Memo to File added to this NEPA Determination.

* NREL and RMS personnel must comply with all provisions of the FAA Certificate of Waiver Authorization (2017-P107-WSA-19950), DOE Order 440.2C Aviation Management and Safety, and 14 CFR Part 107 (Small Unmanned Aircraft Regulations).

* During UAS operations for on-site communication/recall, the person responsible for operations must contact and provide a flight plan to the Aviation Manager and the office of Aviation Management prior to each flight.

Note to Specialist :

Review by Laura Margason - February 21, 2018. Revised March 7, 2018.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:

 Electronically Signed By: **Kristin Kerwin**

NEPA Compliance Officer

Date: **3/7/2018**

FIELD OFFICE MANAGER DETERMINATION

Field Office Manager review required

NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON:

- Proposed action fits within a categorical exclusion but involves a high profile or controversial issue that warrants Field Office Manager's attention.
- Proposed action falls within an EA or EIS category and therefore requires Field Office Manager's review and determination.

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature:

Field Office Manager

Date: