

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



RECIPIENT: NREL

STATE: CO

PROJECT TITLE: NREL - 25-014 - UAS Flights for Ivanpah CSP Heliostat Research – Nipton, CA

Notice of Funding Opportunity Number

Procurement Instrument Number
DE-AC36-08GO28308

NEPA Control Number
GFO-NREL-25-014

CID Number
GO28308

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

CX, EA, EIS APPENDIX AND NUMBER:

Description:

A9 Information gathering, analysis, and dissemination	Information gathering (including, but not limited to, literature surveys, inventories, site visits, and audits), data analysis (including, but not limited to, computer modeling), document preparation (including, but not limited to, conceptual design, feasibility studies, and analytical energy supply and demand studies), and information dissemination (including, but not limited to, document publication and distribution, and classroom training and informational programs), but not including site characterization or environmental monitoring. (See also B3.1 of appendix B to this subpart.)
B3.2 Aviation activities	Aviation activities for survey, monitoring, or security purposes that comply with Federal Aviation Administration regulations.

Rationale for determination:

The U.S. Department of Energy's (DOE) National Renewable Energy Laboratory (NREL) is proposing to use uncrewed aircraft systems (UAS) to collect data from the Ivanpah Solar Electric Generating System (ISEGS) concentrated solar thermal plant (CSP) in Nipton, California. Flights would occur over multiple days during the Spring of 2025.

The purpose of the proposed project is to use drone-based measurement technology to efficiently survey heliostats at ISEGS. A UAS would be deployed to collect images at pre-defined waypoints around the CSP. NREL pilots would perform UAS drone operations. Over the course of four weeks, the NREL team would identify 500-1000 suitable target heliostats over the southernmost field of the CSP.

Flight activities would be conducted by NREL staff as authorized in accordance with NREL policies, procedures, and safety requirements under Federal Aviation Administration (FAA) Part 107 regulations. This proposed flight resides within the Class G airspace (uncontrolled airspace) with Class E (controlled airspace) beginning at 1,200 feet above ground level (AGL). NREL staff would conduct the UAS flights in accordance with FAA Class Airspace requirements.

Flights would be conducted from ground level to 399 feet AGL, would maintain a speed of less than 15 mph, and a minimum horizontal or vertical distance of 25 feet from structures. Flights would be conducted within the plant boundaries and during daylight hours only. All flights would maintain a minimum horizontal distance of 100 feet from the solar power tower. All workers would maintain a minimum of 10 feet of distance from the UAS when they are powered on.

Flights would be conducted with a minimum of one visual observer in addition to the pilot in command. Prior to commencing a flight, the visual observer would monitor the airspace to look for birds and bats; the UAS would not be flown if they are in the area. If birds or bats are observed during flight, the UAS would be piloted away from their predicted path and landed as soon as possible. If birds are in the landing zone, an alternate landing area would be used.

A risk assessment has been completed for flights at ISEGS. Operational parameters, hazards, and controls are identified in an Aviation Safety Plan that was prepared in consultation with NREL Environment, Safety, and Health staff and the UAS Steering Committee. The Flight Plan for this project has been submitted and approved by the Golden Field Office's Aviation Manager. The Aviation Manager determined that the identified flight risks for the project "have been adequately identified and mitigated to low risk per the DOE Risk Assessment. If flight conditions change or the documented mitigation factors are unable to be implemented the mission will need to be paused so a reevaluation of hazards can occur."

No direct or indirect impacts are expected to result from the proposed project.

NEPA PROVISION

DOE has made a final NEPA determination.

Include the following condition in the financial assistance agreement:

Migratory bird nesting monitoring shall be completed by the visual observer prior to project activities commencing.

All required permits and permissions shall be obtained as required prior to conducting flight activity.

Notes:

NREL

Brandon Bammel, 04/24/2025

FOR CATEGORICAL EXCLUSION DETERMINATIONS

The proposed action (or the part of the proposal defined in the Rationale above) fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D. To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Subpart D, Appendix B.

There are no extraordinary circumstances related to the proposed action that may affect the significance of the environmental effects of the proposal.

The proposed action has not been segmented to meet the definition of a categorical exclusion. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

The proposed action is categorically excluded from further NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:

 Electronically
Signed By: Nicole Serio
NEPA Compliance Officer

Date: 4/24/2025

FIELD OFFICE MANAGER DETERMINATION

- ☒ Field Office Manager review not required
☐ Field Office Manager review required

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

Field Office Manager's Signature:

Field Office Manager

Date: