



# U.S. Department of Energy

## Categorical Exclusion Determination Form

Submit by E-mail

Proposed Action Title: Unmanned Aerial Systems (UAS) and Counter UAS (CUAS), Testing and Evaluation, External Department of Energy Sites

Program or Field Office: Department of Energy, National Nuclear Security Administration, Sandia Field Office

Location(s) (City/County/State): Y-12 National Security Complex and surrounding area, Oak Ridge, Tennessee

Proposed Action Description:

Sandia National Laboratory (SNL), Organization 6530 Autonomy and Unmanned Systems, proposes to use Unmanned Aerial Systems (UAS) that meet speed and weight limits for aircraft that are approved by the Federal Aviation Administration (FAA) and/or Sandia Field Office (SFO) Aviation Safety to perform research, development, testing and evaluation (RDT&E). These UASs would also be used for training/demonstrations on government-designed and commercial off the shelf (COTS) UAS and Counter UAS (CUAS) systems.

The UASs would be operated both by remote communications and onboard autonomous navigation (defined waypoint missions). While in either mode, the UAS would look for a continuous communications signal, and, if the signal is dropped, it would autonomously return to an approved, safe location. UAS flight times would vary between 10 minutes up to several hours, dependent upon battery charge (electric UAS), fuel level (for liquid fuel UAS), payloads, and mission requirements.

The proposed ground-based activities would include personnel temporarily siting: vehicles, mobile trailer(s) containing the UAS system(s), in some cases a portable gasoline fueled electrical generator, a temporary antenna mast (secured with sandbags and/or tent stakes driven up to 12 inches into the ground), shade structures, tables, chairs, etc., in the locations to be tested. These activities would only occur on improved and/or previously disturbed land, such as parking areas, bladed or paved ground, roadways, etc. In the event of the loss or grounding of an airborne UAS on undisturbed land, it would be located and retrieved by personnel on foot.

The proposed activities would be conducted intermittently throughout the year as needed. Each day's test activities would be reviewed for potential environmental hazards and coordinated and scheduled with local fire restrictions and operations, utilizing local processes and procedures for deconfliction.

The proposed UAS activities would be performed in accordance with all applicable Federal Aviation Administration (FAA), DOE/Sandia, and any local requirements of the hosting organization if applicable. These include, but are not limited to, DOE/SFO Aviation Safety Approvals, FAA Certificate of Authorization (COA/Part 107) air space and altitude limitations, and hosting organization requirements.

See the attached maps for project location and location specific details.

Categorical Exclusion(s) Applied:

10 CFR 1021, Appendix B to Subpart D, items B1.2 "Training exercises and simulations," B3.2 "Aviation activities," and B3.11 "Outdoor tests and experiments on materials and equipment components."

**Justification:** The proposed action is consistent with 10 CFR 1021, Appendix B to Subpart D categorical exclusions:

B1.2, "Training exercises and simulations (including, but not limited to, firing-range training, small-scale and short-duration force-on-force exercises, emergency response training, fire fighter and rescue training, and decontamination and spill cleanup training) conducted under appropriately controlled conditions and in accordance with applicable requirements;"

B3.2 "Aviation activities for survey, monitoring, or security purposes that comply with Federal Aviation Administration regulations;" and

B3.11, "Outdoor tests and experiments for the development, quality assurance, or reliability of materials and equipment (including, but not limited to, weapon system components) under controlled conditions. Covered actions include, but are not limited to, burn tests (such as tests of electric cable fire resistance or the combustion characteristics of fuels), impact tests (such as pneumatic ejector tests using earthen embankments or concrete slabs designated and routinely used for that purpose), or drop, puncture, water-immersion, or thermal tests. Covered actions would not involve source, special nuclear, or byproduct materials, except encapsulated sources manufactured to applicable standards that contain source, special nuclear, or byproduct materials may be used for nondestructive actions such as detector/ sensor development and testing and first responder field training."

For the complete DOE National Environmental Policy Act regulations regarding categorical exclusions, including the full text of each categorical exclusion, see Subpart D of [10 CFR Part 1021](#).

Regulatory Requirements in 10 CFR 1021.410(b): (See full text in regulation)

☒ The proposal 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 proposal that may affect the significance of the environmental effects of the proposal.

☒ The proposal 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.

Based on my review of the proposed action, as NEPA Compliance Officer (as authorized under DOE Order 451.1B), I have determined that the proposed action fits within the specified class(es) of action, the other regulatory requirements set forth above are met, and the proposed action is hereby categorically excluded from further NEPA review.

Approved by:

| NEPA COMPLIANCE OFFICER | DATE DETERMINED: |
|-------------------------|------------------|
|                         | July 5, 2022     |

## Y12 UAS Operations – Off site, Plant Border (Blue) to 10km Ring (Red)



Flights will follow the approved Aviation Safety Plan (ASP). If ever the NEPA checklist is in conflict with the ASP, the ASP shall be followed.

- Flights will terminate if any birds are spotted showing interest in and flying toward the UAS
- Any crashed batteries will be handled as HAZMAT and will be disposed of at Y-12.
- UAS will operate within the 10km radius shown by the red circle given that Flights:
  - Will be < 400 ft AGL
  - Will not occur over open water
  - Will stage from public areas clear of people and obstructions, e.g.
    - Dirt road shoulders
    - Cleared areas
  - Will always occur within 500m radius and visual line of sight of the Pilot/Observer over areas that have no discernable public activity.

- Estimated # of locations to stop on sides of roads: **30-40**
- Estimated duration of flights: **20 minutes**
- Estimated # of flights/activities: **30-40**
- Estimated # of trailers/trucks planned to use: **2**
- Estimated # of people involved in activities: **2-4**
- Generator use? **No generator use required**
- Cultural resource sites? : **No – we will consult with Y12 before operations commence, and avoid any areas of concern.**
- Fuel in UAS or want to limit to batteries? **Batteries only**