



U.S. Department of Energy

Categorical Exclusion Determination Form

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Proposed Action Title: Predictive Real-time Emissions Technologies Reducing Aircraft Induced Lines in the Sky-- PRE-TRAILS (FOA No. DE-FOA-0002784)

Program or Field Office: Advanced Research Projects Agency - Energy

Location(s) (City/County/State): AL, CA, CO, CT, IA, MA, MN, NM, NY, TX, WA, WI

Proposed Action Description:

The Predictive Real-time Emissions Technologies Reducing Aircraft Induced Lines in the Sky (PRE-TRAILS) program seeks to develop an Aviation Contrail Predictive System capable of informing pilots and ground controllers in real-time whether an airplane is likely to produce persistent aircraft-induced cirrus (AIC). Specifically, the PRE-TRAILS program will collect in-flight data, apply computer diagnostics, and employ predictive modeling tools to determine whether an airplane is likely to produce persistent AIC. If successful, PRE-TRAILS projects will develop the diagnostics and predictive tools needed to reduce or eliminate greenhouse gas emissions from aviation and upper atmospheric cloud formation.

The PRE-TRAILS program is composed of 5 small-scale research and development projects that will be conducted by universities, for-profit entities, small businesses, and federal laboratories (listed in Attachment A). All 5 projects fit within the class of actions identified under the DOE Categorical Exclusions identified below. This assessment was based on a review of the proposed scope of work and the potential environmental impacts of each project. All project tasks will be conducted in accordance with established safety and materials/waste management protocols and pursuant to applicable Federal, State, and Local regulatory requirements.

Categorical Exclusion(s) Applied:

A9 - Information gathering, analysis, and dissemination

B3.6 - Small-scale research and development, laboratory operations, and pilot projects

B3.2 - Aviation activities

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.

NEPA Compliance Officer: **GEOFFREY GOODE** Digitally signed by GEOFFREY GOODE
Date: 2023.12.06 15:21:07 -05'00'

Date Determined:

Attachment A: Projects in the PRE-TRAILS (FOA No. DE-FOA-0002784) Program

Prime Recipient (Control No.)	Project Title	Categorical Exclusion
Boeing Research and Technology (2784-1694)	Contrail INformation for Collaborative Operations (CINCO)	A9, B3.6 B3.2
GE Research (2784-1551)	Engine-informed Prediction of Aviation Induced Cirrus Trails-EPIC-Trails	A9
Northrup Grumman Systems Corporation (2784-1703)	Contrail Avoidance System	A9, B3.6
Raytheon Technologies (2784-1572)	CONFIRMMS: CONtrail Forecasting through In-situ Reliable Multisourced Modeling and Sensing	A9, B3.6
Universities Space Research Association (2784-1702)	Physics and Machine Learning Based Aviation Contrails Prediction and Observation System	A9