Department of Energy
National Nuclear Security Administration
National Environmental Policy Act (NEPA) Determination Form

Proposed Action Title: Categorical Exclusion for Domestic Atmospheric Radiation Measurement Campaign–Desert-Urban System Integrated Atmospheric Monsoon (DUSTIEAIM)

Program or Field Office: NNSA Los Alamos Field Office - Los Alamos, New Mexico

Location(s) (City/County/State): Arizona, United States

Proposed Action Description

The U.S. Department of Energy (DOE), Office of Science, in conjunction with Triad National Security, LLC (Triad), the operating contractor for Los Alamos National Laboratory (LANL), conducts atmospheric and environmental research and monitoring activities by deploying mobile facilities and equipment (including weather balloons) for 1- to 2-year campaigns at locations throughout the U.S. DOE and Triad propose to deploy equipment and launch weather balloons to support the Desert-Urban System Integrated Atmospheric Monsoon (DUSTIEAIM). This project will investigate how the urban and desert environments influence convection and precipitation around Phoenix, especially regarding the summertime North American Monsoon. As a part of field instrument deployments and operations deliverables to the sponsor, the ARM campaign will deploy and operate one of ARM's mobile observatories from about January 2026 through December 2028 at two locations in the Phoenix, Arizona, region. The main site, located on the Arizona State University (ASU) West campus, will host the majority of the observatories' instruments and equipment. A secondary site, "Atlas," will be located to the north of the city near New River, Arizona. Weather balloons will be used to provide a valuable means of in-situ measurements of upper air observations of the Earth's atmosphere. Balloons collect scientific data on the atmosphere in an efficient and cost-effective manner. To facilitate gathering data, 4 balloons will be launched per day for 18 months from the ASU site, totaling about 2,250. Activities would be designed in conformance with applicable regulatory requirements and use of best management practices. Following the data collection period each site would be restored to pre-project conditions.

NEPA Analysis

B3.1: Site characterization and environmental monitoring - Site characterization and environmental monitoring (including, but not limited to, siting, construction, modification, operation, and dismantlement and removal or otherwise proper closure [such as of a well] of characterization and monitoring devices, and siting, construction, and associated operation of a small-scale laboratory building or renovation of a room in an existing building for sample analysis). Such activities would be designed in conformance with applicable requirements and use best management practices to limit the potential effects of any resultant ground disturbance. Covered activities include, but are not limited to, site characterization and environmental monitoring under CERCLA and RCRA. This class of actions excludes activities in aquatic environments. Specific activities include but are not limited to: (a) Geological, geophysical (such as gravity, magnetic, electrical, seismic, radar, and temperature gradient), geochemical, and engineering surveys and mapping, and the establishment of survey marks. Seismic techniques would not include large-scale reflection or refraction testing; (b) installation and operation of field instruments (such as stream-gauging stations or flow-measuring devices, telemetry systems, geochemical monitoring tools, and geophysical exploration tools); (c) drilling of wells for sampling or monitoring of groundwater or the vadose (unsaturated) zone, well logging, and

installation of water-level recording devices in wells; (d) aquifer and underground reservoir response testing; (e) installation and operation of ambient air monitoring equipment; (f) sampling and characterization of water, soil, rock, or contaminants (such as drilling using truck- or mobile-scale equipment, and modification, use, and plugging of boreholes); (g) sampling and characterization of water effluents, air emissions, or solid waste streams; (h) installation and operation of meteorological towers and associated activities (such as assessment of potential wind energy resources); (i) sampling of flora or fauna; and (j) archeological, historic, and cultural resource identification in compliance with 36 CFR part 800 and 43 CFR part 7.

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

Regulatory Requirements in DOE's NEPA Implementing Procedures

For the complete DOE National Environmental Policy Act procedures regarding categorical exclusions, including the full text of each categorical exclusion, see DOE's NEPA Implementing Procedures, Appendix B.

To find that a proposal is categorically excluded, DOE shall determine the following:

(1) The proposal fits within a class of actions listed in Appendix B to DOE's NEPA Implementing Procedures;

(2) There are no extraordinary circumstances related to the proposal that may affect the significance of the environmental effects of the proposal; and

(3) The proposal has not been segmented to meet the definition of a categorical exclusion. The proposal is not connected to other actions with potentially significant impacts, is not related to other actions with individually insignificant but cumulatively significant impacts, and is not precluded by limitations on actions during preparation of an environmental impact statement.

The classes of actions listed in DOE's NEPA Implementing Procedures, Appendix B, include the following conditions as integral elements of the classes of actions. To fit within the classes of actions in 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 identified as needing protection through Executive Order, statute, or regulation by Federal, state, local government, or Federally recognized Indian tribe; (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 of the Department of Agriculture, the Environmental Protection Agency, and the National Institutes of Health.

Best Management Practices

The below table summarizes the best management practices actions based on the NEPA analysis of this project.

Resources	Impact Identified	Best Management Practices
Ecological Resources	Deployment of weather balloons may impact terrestrial and aquatic environments from balloons and radiosondes if they are unable to be retrieved by the project.	• Ensure the use of 100 percent natural latex rubber, biodegradable weather balloons. • Use biodegradable components (cotton or cellulose-based string, etc.) whenever available. • Use lithium-ion batteries (or better, when available) to minimize impacts to terrestrial and water environments. • Minimize weather balloon use and launches to only those necessary to achieve project goals. • Continue to use radiosondes that minimize packaging waste. • Ensure that return address and safety information are attached to radiosondes before launch to assist in minimizing impacts.
Waste Management	Balloons and radiosondes that are unable to be retrieved by the project would contribute to waste on the landscape.	• Ensure the use of 100 percent natural latex rubber, biodegradable weather balloons. • Use biodegradable components (cotton or cellulose-based string, etc.) whenever available. • Minimize weather balloon use and launches to only those necessary to achieve project goals. • Continue to use radiosondes that minimize packaging waste. • Ensure that return address and safety information are attached to radiosondes before launch to assist in minimizing impacts.

NEPA Compliance Officer Determination

Based on my review of information conveyed to me and in my possession concerning the proposed action, as NEPA Compliance Officer (as authorized under NNSA NAP 451.1), I have determined that the proposed action fits within the specified categorical exclusions identified in DOE's NEPA Implementing Procedures, Appendix B, Sections B3.1 and B3.2. If changes are made to the scope of the action so that it is no longer bounded by the above description, or the project is changed to encompass other actions, NEPA requirements for the action will need to be reassessed at that time and further analysis may be required. I have determined that there are no extraordinary circumstances present, and that the proposal has not been segmented. I approve the proposed project under DOE's NEPA Implementing Procedures, Appendix B3.1 and B3.2. This determination is made pursuant to the NEPA [42 U.S.C. 4321 et seq.] and the DOE NEPA Implementing Procedures.

KAREN ARMIJO

Digitally signed by KAREN ARMIJO
Date: 2025.12.19 09:29:07 -07'00'

NEPA Compliance Officer: Date Determined: