



National Nuclear Security Administration Categorical Exclusion Determination Form



NEPA ID#: HEDLP 15-001-001

Proposed Action Title: Nevada Desert Research Center (Nevada Desert FACE Facility and Mojave Global Change Facility) (NV-2017-045)

Program or Field Office: Nevada Field Office

Location(s) (City/County/State): Nevada National Security Site (NNSS), Nye County NV

Proposed Action Description:

The University of Nevada, Las Vegas (UNLV), Desert Research Institute (DRI) and University of Nevada, Reno (UNR) are jointly conducting ecological and climate change research at the Nevada National Security Site (NNSS). There are two projects within Area 5 of the NNSS. They are the Nevada Desert FACE Facility (NDFF) and the Mojave Global Change Facility (MGCF). These projects use a trailer on location and have several soil/vegetation study plots. The NDFF explored the impact of elevated atmospheric CO₂ on the Mojave Desert, with fumigation of 550 ppm of CO₂ occurring April 1997 through June 2007. Current NDFF research is examining the retention of CO₂ over time. The MGCF is a complementary research facility that is examining the impact of other climate change factors, i.e., altered precipitation, nitrogen deposition and increased soil crust disturbance. The small field plots (25 m diameter for NDFF and 14 m by 14 m for MGCF) are used to examine current plant/soil/root interactions. Researchers from within Nevada as well as research institutions across the US are using these facilities to examine a large number of responses including, but not limited to, above- and below-ground plant responses, soil nutrient cycles, insect herbivory, and soil moisture.

To perform these experiments a number of different methodologies and equipment are employed. Some of the methodologies may only require a meter stick while others require the use of sophisticated sensors, e.g., soil moisture probes and multispectral scanners/cameras. In general, all research activities adhere to a minimal disturbance rule (no disruption of the biological soil crust and plant life) and therefore have minimal to no environmental impact. The most common activities have included plant measurements of dimensions, gas exchange and water potential and soil measurements of temperature, moisture and respiration. On occasions (no more than twice per year) small surface soil samples are collected by hand.

From time-to-time, small UAS (sUAS; less than 55 lbs) would be flown at MGCF and NDFF to acquire standard color and near infrared images of ground conditions. In the past the sUAS flown was a gas-powered single rotor helicopter. Recently only battery operated fixed wing sUAS have been flown at MGCF and NDFF. Although there is always a potential for failure during flight operations, the risk of significant damage is quite low given the small fuel capacity (less than 1 quart) and small size of the sUAS (54" maximum length and a maximum weight of 15 lbs or less). Standard operating and safety procedures have been developed that comply with CD-P280.004 (Aviation Operations Safety) and all flights are approved in advance by the NNSS Operations Coordination Center.

Categorical Exclusion(s) Applied:

10 CFR 1021: B3.8 Outdoor ecological research project

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 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.

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.

Based on my review of information conveyed to me and in my possession concerning 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 and that other-regulatory requirements set forth above are met. Therefore, the application of a categorical exclusion is appropriate.

NEPA Compliance Officer: Carrie Stewart

Date Determined: June 26, 2017