

PMC-ND
(1.08.09.13)

U.S. DEPARTMENT OF ENERGY

OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY

NEPA DETERMINATION



RECIPIENT: International Association of Fire Fighters

STATE: DC

PROJECT TITLE: A Safe Response to Renewable Energy Hazards

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002258	DE-EE0009454	GFO-0009454-001	

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.)

A11 Technical advice and assistance to organizations Technical advice and planning assistance to international, national, state, and local organizations.

B1.2 Training exercises and simulations 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.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to the International Association of Fire Fighters (IAFF) to conduct a series of large-scale burn tests involving renewable energy components. The tests would be developed by a Project Advisory Panel composed of firefighters, in cooperation with UL Fire Protection Engineers, industry representatives, and renewable technology subject matter experts, with a goal of developing tactical considerations for use by the fire service in response to a residential structure fires that involve renewable energy systems. Specifically, the proposed project would focus on residential Battery Energy Storage Systems (BESS) and Exterior Building Technologies.

Project activities would include fabricating mock BESS along with a garage and mock exterior residential wall assemblies to be burned for testing at UL laboratories in Northbrook, IL. A recognized leader in fire safety and certification, UL is a full-service provider of fire safety testing and certification services for stakeholders around the world. The Northbrook location is UL's headquarters and contains purpose-built fire laboratory facilities, including a large scale burn room (120 ft x 120 ft with 50 ft ceiling), in which all project work would occur. Test results, data, and video footage of the burn tests would be utilized to develop educational materials by the IAFF and UL and used in ongoing training interactions with the fire service.

The estimated quantities of materials to be used and produced by the proposed project would include the following:

- 10,000 gal water for fire extinguishment
- 18,750 lithium-ion 18650 cells (the 18650 battery is a lithium-ion cell classified by its 18mm x 65mm size, which is slightly larger than a AA battery)
- One (1) two car garage (wood 2x4's, drywall, siding, roofing)
- Six (6) 8 ft x 8 ft mock exterior residential walls (wood 2x4's, insulation, drywall, siding)
- Three (3) 16 ft x 16 ft mock exterior residential walls with partial roof and attic space (wood 2x4's, insulation,

drywall, siding, roofing)

Health and safety hazards to project workers that are associated with the proposed activities include the conditions (fire and smoke) generated by controlled burn tests. All hazards and the efforts that would be taken to mitigate these hazards are operationally routine for UL and would be confined to dedicated laboratory spaces. UL operates in compliance with OSHA requirements and in accordance with all pertinent Federal, state, and local environmental regulations. Project work would be overseen and conducted by properly trained UL staff with turnout gear, SCBAs, and appropriate water supplies, including a sprinkler system and remotely operated water cannons. Each laboratory is connected to a regenerative thermal oxidizer (RTO) which would be running during testing in order to draw the smoke out of the lab to be scrubbed of contaminants before being released to the atmosphere.

The fabrication of mock energy storage systems would involve the use and management of lithium ion cells and potentially hazardous waste. Each cell would be less than 4 volts and there would be no associated risk of electrical shock because the individual cells would not be electrically connected. Cells would be handled with appropriate personal protective equipment, including hardhats, steel toe boots, and safety glasses. After testing, the cells would be left to cool and separated into two categories: 1) burned; 2) damaged or intact. The cooled, burned cells are considered non-hazardous waste while the damaged or intact cells would require special handling. Once cooled, any damaged or intact cells would be electrically discharged in an aqueous ionic solution bath and reignition would not be possible. The neutralized cells would be packaged and transported according to Department of Transportation requirements to a battery recycling facility. The leftover bath solution would be packaged and removed by a licensed environmental waste disposal company.

Non-hazardous wastes that would be generated by the proposed project would include leftover or burned building materials (garages and wall assemblies) and the burned lithium ion cells. These would be removed from the site to a landfill following established waste disposal processes already in place at UL. Wastewater would run into a collection tank during testing, and contents of the tank would be tested to confirm it is non-hazardous before being released to the municipal system. If for some reason it is determined to be hazardous, the contents of the collection tank would be removed by a licensed environmental waste disposal company. Fire damaged instrumentation would also be discarded as non-hazardous solid waste. Any intact instrumentation would be retained for future projects.

The UL Northbrook facility was designed for the type of activities being proposed; therefore, based on the review of the proposal, DOE has determined that no adverse impacts to sensitive resources are to be expected as a result of the proposed activities at this location. No change in the use, mission, or operation of existing facilities would arise out of this effort. The facility has all applicable permits in place, and would not need additional permits for the proposed activities.

NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

Solar Energy Technologies Office

This NEPA determination does not require a tailored NEPA Provision.

NEPA review completed by Whitney Doss Donoghue, 8/9/2021

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:** Kristin Kerwin
NEPA Compliance Officer

Date: 8/10/2021

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: _____