U.S. Department of Energy
Categorical Exclusion Determination Form

Submit by E-mail

Proposed Action Title: (0675-1577) Lawrence Livermore National Laboratory (LLNL) - Novel Battery Management System with Distributed Wireless Sensors

Program or Field Office: Advanced Research Projects Agency - Energy

Location(s) (City/County/State): Pawcatuck, CT; Livermore, CA; Monterey, CA; McClellan, CA; Port Hueneme, CA

Proposed Action Description:

Funding will support efforts to develop a battery management system that utilizes distributed wireless sensors incorporated into battery modules.

Proposed work will consist of: (1) analytical activities, including literature review and component and system design; (2) assembly and testing of sensor ensembles; (3) fabrication of battery cells and assembly of sub-scale battery modules with integrated sensor ensembles; and (4) destructive and nondestructive testing of sub-scale battery modules with integrated sensor ensembles, including testing via radiographic methods.

Analytical activities will take place at the Naval Facilities Engineering Service Center's facility in Port Hueneme, CA. Assembly and testing of sensor ensembles and destructive and nondestructive testing of sub-scale battery modules will take place at LLNL's electrochemical laboratory and confined firing facility in Livermore, CA. Fabrication of battery cells and modules and destructive testing of battery modules will take place at Yardney Technical Products' industrial battery fabrication and laboratory facilities in Pawcatuck, CT. Assembly of sub-scale battery modules with integrated sensor ensembles will take place at Polystor Energy Corporation's industrial battery fabrication and laboratory facilities in Livermore, CA. Nondestructive testing of sub-scale battery modules using neutron absorption radiography and other methods will take place at McClellan Nuclear Research Center's laboratory facility in McClellan, CA. Nondestructive testing of sub-scale battery modules may also take place at Navy Post Graduate School's laboratory facilities in Monterey, CA.

Categorical Exclusion(s) Applied:

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

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: Date Determined: 09/11/2012