UNITED STATES DEPARTMENT OF COMMERCE
National Institute of Standards and Technology
Gaithersburg, Maryland 20899

May 15, 2024

MEMORANDUM FOR THE RECORD

From: Mark Liau
NEPA Coordinator

Subject: Categorical Exclusion

Project Title: Battery Innovation Laboratory and Education Center

Location: Ohio State University
1305 Kinnear Road, Columbus Ohio, 43210

The National Environmental Policy Act (NEPA) and associated implementing regulations (40 CFR Parts 1500-1508) require that all major actions by federal agencies be reviewed with respect to the environmental consequences on the human environment. The National Institute of Standards and Technology (NIST) is providing a congressionally directed funding grant for the Battery Innovation Laboratory and Education Center at Ohio State University. Consequently, NEPA and the associated implementing regulations apply.

This memorandum summarizes the determination that the Battery Innovation Laboratory and Education Center project has been found to be categorically excluded from further environmental review under NEPA.

**Description of the Action**

This project involves the renovation of 21,897 square feet in an existing building on the Ohio State University (OSU) West Campus. The existing building is a multi-purpose warehouse that was built in 1953 and acquired by OSU in 1992. In 1998, OSU and the Science and Technology Campus Corporation (SciTech), an affiliate of OSU, entered into a facility lease agreement to have the building operated and managed by SciTech. SciTech's goal is to develop an enhanced research park on the university's west campus. 5,415 square feet of the existing building space will be constructed into a dry room for battery cell fabrication and training. The remainder of the renovated space will be used for a quality control laboratory, a mixed-use space, battery cell

formation and aging test labs, a mechanical room, a storage room and an administration area. Due to the moisture sensitivity of battery cell components, a dry room with strict humidity control is required. The project also includes purchasing and installing equipment for battery cell assembly within the dry room environment.

The proposed dry room will facilitate the accelerated development and translation of batteries from the lab to practical scales by studying battery cell development in a relevant dry room assembly environment. This infrastructure fills a gap by providing researchers with an environment to assemble both current Li-ion and future solid-state batteries. This facility is intended to accelerate the development timeline of new battery technologies.

This project will be accomplished in accordance with all applicable state and federal environmental and safety regulations. All applicable regulatory permitting will be obtained.

**Specific Considerations of this Action and any Extraordinary Circumstances**

- **Hazardous Materials**

OSU's Environmental Health and Safety (EHS) Department has an established hazardous waste program which will apply to the new Battery Innovation Laboratory and Education Center. All hazardous wastes will be disposed through the OSU EHS contracted waste company and will be handled and disposed in accordance with State and Federal regulations.

One chemical planned to be used at the new Battery Innovation Laboratory and Education Center is N-Methyl-2-pyrrolidone (NMP). NMP is an alternative to other (more toxic) organic chemical solvents approved by the U.S. EPA. The amount of NMP projected to be used is 0.9 kg/day (1.98 lb/day). NMP, and all other required chemicals, will be used in an appropriate manner to minimize any occupational exposure and will be disposed appropriately to minimize any environmental releases.

- **Air Emissions**

No significant impacts to air quality are expected from the construction or operation of the new Battery Innovation Laboratory and Education Center. The project is not expected to be a significant source of criteria pollutants such as Ozone, Particulates, Carbon Monoxide, Lead, Sulfur Dioxide, or Nitrogen Dioxide.

As discussed above NMP will be used at an estimated amount of approximately 2.0 lbs/day or 730 lbs/yr. The Emergency Preparedness and Community Right to Know Act, Section 313, requires that NMP releases be reported as part of a Toxic Release Inventory. The reporting threshold for NMP is 10,000 lbs/year. The new Battery Innovation Laboratory and

Education Center will use a carbon bed system with monitoring to remove 90-95% of NMP from the air stream prior to being released. The scrubbed airstream would then be discharged from a stack at the high point of the building at a rate of approximately 7.3 lbs per year.

- **Building Staffing/Utilities**

The number of staff and students working/studying at the new Battery Innovation Laboratory and Education Center is not expected to be significantly greater than the current number of staff. Water consumption, electricity use and fuel use are not expected to change significantly when compared to the current building use.

- **Greenhouse Gas Emissions**

No significant increases in greenhouse gas emissions are expected from the new Battery Innovation Laboratory and Education Center. Heating and Cooling requirements will be similar to the existing facility. Greenhouse gas emissions resulting from the operation of the building will be minimized by implementing energy efficient measures such LED light fixtures,

- **Flooding Potential and Resilience**

This project is not located within a FEMA mapped 100- or 500- year floodplain. The project site is approximately 1 mile from the Scioto River floodplain.

- **Historic/Cultural Significance**

For the renovation tasks planned, no adverse impacts are expected to any historic or cultural resources at the project site or in the vicinity.

- **Environmental Justice**

This project is located on OSU property. The renovations planned are not anticipated to have any disproportional adverse human health or environmental impacts to overburdened and underserved communities, including minority, Tribal, or low income populations.

**Effects of the Action**

No significant adverse impacts on the environment are expected from this action.

**Categorical Exclusion**

The activities associated with this project fall within the criteria of the following Department of Commerce Categorical Exclusion:

**A–1** Minor renovations and additions to buildings, roads, airfields, grounds, equipment, and other facilities that do not result in a change in the functional use of the real property

(*e.g.* realigning interior spaces of an existing building, adding a small storage shed to an existing building, retrofitting for energy conservation, or installing a small antenna on an already existing antenna tower that does not cause the total height to exceed 200 feet and where the FCC would not require an environmental assessment or environmental impact statement for the installation). This CE does not apply in instances where the project must be submitted to the National Capital Planning Commission (NCPC) for review and NCPC determines that it does not have an applicable Categorical Exclusion.

This project is considered a minor renovation of a building that does not change the functional use of the real property. The project does not require review by the NCPC.

The proposed Battery Innovation Laboratory and Education Center is categorically excluded from the need for further environmental review under NEPA. Any changes to the above project will require additional NEPA review.

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Mark Liau
NIST NEPA Coordinator

Date

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Robert C. Vaughn
NIST Chief Facilities Management Officer

Date