DOE-ID NEPA CX DETERMINATION
Idaho National Laboratory

CX Posting No.: DOE-ID-INL-21-117

SECTION A. Project Title: Ametek Manufacture of PINS Simulant Chemicals

SECTION B. Project Description and Purpose:

The Portable Isotopic Neutron Spectroscopy (PINS) is a unique, one-of-a-kind system developed specifically for on-site analysis of actual or suspect chemical warfare munitions. PINS employs well-established and well-known technologies, packages and incorporates them into an innovative, transportable, and field-worthy system. The system components are expensive and delicate. Battelle Energy Alliansce, LLC (BEA) will prepare PINS Simulant Chemicals and provide them to AMETEK Advanced Measurement Technology, Inc. An experienced spectroscopist from Idaho National Laboratory (INL) will oversee the production of PINS Simulant Chemicals at INL. The scope of the work will be performed over the next 48 months. AMETEK Advanced Measurement Technology, Inc has or anticipates it may receive PINS purchase requests from non-US customers and such customers may also purchase PINS Simulant Chemicals from AMETEK. AMETEK has the sole and exclusive responsibility to appropriately obtain and maintain any and all licenses and authorizations to fully comply with applicable laws in the providing of PINS Simulant Chemicals to such customers including, without limit, any pertaining to export, re-export or deemed export.

The first objective of the project is to prepare PINS Simulant Chemicals and ship them in containers to AMETEK. The work will be performed at INL Research Center (IRC) Lab A-19 and the PINS Lab IF-675. Containers will be purchased for the chemical simulants, and some commercial off the shelf electronics may be purchased for the project.

The second objective is to perform minor modifications to PINS+ to automatically identify new agents or chemical elements not currently identified by the system or add new communication protocols to interface with new or modified hardware.

The third objective is to provide PINS training to foreign national users at INL. Estimated duration of this task is 1 week for each training session.

The work will be performed on a full cost recovery basis. AMETEK shall provide sufficient funds in advance to reimburse BEA for costs to be incurred in performance of the work. No federal funds will be used to purchase any property or equipment for this project. Each party (BEA and AMETEK) is responsible for its own compliance with laws and regulations governing export controls (Strategic Partnership Projects Agreement No. 16812).

According to the researcher, the process of preparing PINS simulant chemicals involves mixing, or adding, stock chemicals to obtain the correct “relative percentages of elements”. They combine chemicals such as polyethylene, melamine, salt, sulfur, etc., to obtain the correct ratios of H, N, C, and Cl. There are no chemical reactions; therefore, they will not be creating new compounds. They will not add any new chemicals to the INL’s existing chemical database.

The chemical sodium metabisulfite is listed in the TSCA regulations. This project will not be manufacturing the sodium metabisulfite chemical but will be using the chemical along with the other provided chemicals to produce (process) the PINS simulant chemicals. According to the regulations, 40 CFR 717 'Records and Reports of Allegations that Chemical Substances Cause Adverse Reactions to Health or the Environment' is applicable to the project. Reporting and record keeping requirements will apply if the project receives any allegations or significant reactions to someone's health or the environment as a result of using the chemicals. Any new chemicals besides the chemicals previously listed for the project will need to be evaluated for TSCA applicability.

The process does not emit radiologocal or toxic air emissions because the PINS Simulant manfuacturing does not result in a release of air emissions regarding the chemicals used for preparation. The only chemical used for preparation that could be of concern is Carbon Tetrachloride. However, the APAD for each facility covers the emissions from this chemical.

SECTION C. Environmental Aspects or Potential Sources of Impact:

Air Emissions

Possible air emissions could be released from the chemical Carbon Tetrachloride; however, the chemical is covered under the APAD for the facilities.

Discharging to Surface-, Storm-, or Ground Water

N/A

Disturbing Cultural or Biological Resources

N/A

Generating and Managing Waste

Small amounts of chemical waste will be generated. The waste is not mixed or radioactive. The waste will be disposed of as industrial waste.

Releasing Contaminants

Whenever chemicals are used there is a potential for spills or releases.

Using, Reusing, and Conserving Natural Resources

Waste shall be diverted from the landfill whenever practicable.

SECTION D. Determine Recommended Level of Environmental Review, Identify Reference(s), and State Justification: Identify the applicable categorical exclusion from 10 Code of Federal Regulation (CFR) 1021, Appendix B, give the appropriate justification, and the approval date.

For Categorical Exclusions (CXs), the proposed action must not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environmental, safety, and health, or similar requirements of Department of Energy (DOE) or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment or facilities; (3) disturb hazardous substances, pollutants, contaminants, or Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)-excluded petroleum and natural gas products that pre-exist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources (see 10 CFR 1021). In addition, no extraordinary circumstances related to the proposal exist that would affect the significance of the action. In addition, the action is not "connected" to other action actions (40 CFR 1508.25(a)(1) and is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1608.27(b)(7)).

References: The R&D activities identified in this ECP are covered by CX B3.6 "Small-scale research and development, laboratory operations, and pilot projects."

Justification: The proposed R&D activities are consistent with CX B3.6 "Siting, construction, modification, operation, and decommissioning of facilities for small-scale research and development projects; conventional laboratory operations (such as preparation of chemical standards and sample analysis); and small-scale pilot projects (generally less than 2 years) frequently conducted to verify a concept before demonstration actions, provided that construction or modification would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible). Not included in this category are demonstration actions, meaning actions that are undertaken at a scale to show whether a technology would be viable on a larger scale and suitable for commercial deployment."

Is the project funded by the American Recovery and Reinvestment Act of 2009 (Recovery Act) ☐ Yes ☒ No

Approved by Jason L. Anderson, DOE-ID NEPA Compliance Officer on: 09/14/2021