DOE-ID NEPA CX DETERMINATION
Idaho National Laboratory

CX Posting No.: DOE-ID-INL-15-058

SECTION A. Project Title: Hot Fuel Examination Facility (HFEF) Stack Sampling Tracer Gas Testing

SECTION B. Project Description and Purpose:

Battelle Energy Alliance, LLC (BEA) is considering increasing the flow rate in their Hot Fuel Examination Facility (HFEF) Stack at the Materials and Fuels Complex (MFC) at Idaho National Laboratory (INL) from 34,000 cubic feet per minute (CFM) up to 50,000 CFM. BEA has already used Engineering Calculations and Analysis (ECAR)-2403, a Computational Fluid Dynamics (CFD) simulations program, to predict the tracer gas concentration profile at 34,000 CFM and 50,000 CFM. The ECAR-2403 analysis showed that at the current sampling location the tracer gas concentration is higher than the average concentration across the stack, and hence, the current stack sampling system would provide a conservative sample at a stack flow rate of 50,000 CFM. However, before approving the higher flow rate of 50,000 CFM, the Environmental Protection Agency (EPA) has requested that a set of tracer gas tests be performed. BEA has awarded a contract to HI-Q to perform the required tracer gas tests at 34,000 CFM and 50,000 CFM to validate the ECAR-2403 model and also write a report to present to EPA for approval. The objective of the activities and/or tests is to evaluate the current stack sampling location within the HFEF stack for assurance that the tracer gas concentration at the sampling location is higher than the average concentration across the 20 grid points across the stack.

The gaseous contaminant concentration profile is determined by injecting Sulfur Hexafluoride into the air along the centerline of the stack, just downstream of the three process off-gas blowers. The tracer gas concentration is measured at the sampling location at the 20 grid points, using the 4 ports on the north side of the HFEF stack. The tracer gas concentration is measured three times at each grid point and averaged to determine the average concentration at that point.

SECTION C. Environmental Aspects or Potential Sources of Impact:

Air Emissions

The atmospheric tracer sulfur hexafluoride would be released with a total release of approximately 1.4 kg (3 lbs). This project is not considered a modification of the facility as defined in 40 CFR 52.01.(d) and 40 CFR 51.b.(iv).(b) and therefore does not require a permit exemption determination in accordance with IDAPA 58.01.01.220-223. Additionally, this emission is not from a regulated source category as defined in 40 CFR 98 and is not subject to GHG reporting.

Generating and Managing Waste

The proposed action would generate small amounts of industrial type waste. Waste determination and disposition forms (WDDF's) would be established, and the disposal of all waste would be coordinated with Waste Generator Services (WGS).

Releasing Contaminants

See "Air Emissions" for discussion of contaminant release to air.

All chemical procurement, use, and storage would comply with applicable laboratory procedures. All chemicals used during the proposed action would be managed in accordance with company procedures. All subcontractor chemicals and associated Material Safety Data Sheets (MSDS's) would be submitted for approval on a chemical inventory list prior to bringing them on site. These chemicals would be entered into the Comply Plus Chemical Management System by the appropriate Chemical Coordinator.

Using, Reusing, and Conserving Natural Resources

All material will be reused and/or recycled where economically practicable. All applicable waste would be diverted from disposal in the landfill when possible. Project personnel would use every opportunity to recycle, reuse, and recover materials and divert waste from the landfill when possible. The project would practice sustainable acquisition, as appropriate and practicable, by procuring construction materials that are energy efficient, water efficient, are bio-based in content, environmentally preferable, non-ozone depleting, have recycled content, or are non-toxic or less-toxic alternatives.

SECTION F. 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: 10 CFR 1021, Appendix B to Subpart D item B3.1, "Site characterization and environmental monitoring"

Justification: The proposed action is consistent with 10 CFR 1021, Appendix B to Subpart D categorical exclusion B3.1,"Site characterization and environmental monitoring (including, but not limited to, siting, construction, modification, operation, and dismantlement and removal or otherwise proper closure (such as of a well) of characterization and monitoring devices, and siting, construction, and associated operation of a small-scale laboratory building or renovation of a room in an existing building for sample analysis). Such activities would be designed in conformance with applicable requirements and use best management practices to limit the potential effects of any resultant ground disturbance. Covered activities include, but are not limited to, site characterization and environmental monitoring under CERCLA and RCRA. (This class of actions excludes activities in aquatic environments. See B3.16 of this appendix for such activities.) Specific activities include, but are not limited to:
(a) Geological, geophysical (such as gravity, magnetic, electrical, seismic, radar, andtemperature gradient), geochemical, and engineering surveys and mapping, and the establishment of survey marks. Seismic techniques would not include large-scale reflection or refraction testing;
(b) Installation and operation of field instruments (such as stream-gauging stations or flow-measuring devices, telemetry systems, geochemical monitoring tools, and geophysical exploration tools);
(c) Drilling of wells for sampling or monitoring of groundwater or the vadose (unsaturated) zone, well logging, and installation of water-level recording devices
in wells;
(d) Aquifer and underground reservoir response testing;
(e) Installation and operation of ambient air monitoring equipment;
(f) Sampling and characterization of water, soil, rock, or contaminants (such as drilling using truck- or mobile-scale equipment, and modification, use, and plugging of boreholes);
(g) Sampling and characterization of water effluents, air emissions, or solid waste streams;
(h) Installation and operation of meteorological towers and associated activities (such as assessment of potential wind energy resources);
(i) Sampling of flora or fauna; and
(j) Archeological, historic, and cultural resource identification in compliance with 36 CFR part 800 and 43 CFR part 7.

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

Approved by Jack Depperschmidt, DOE-ID NEPA Compliance Officer on: 9/25/2015