PMC-ND (1.08.09.13)

U.S. DEPARTMENT OF ENERGY OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY NEPA DETERMINATION



RECIPIENT: Carollo Engineers

STATE: CO

PROJECT	Transforming Aeration Energy in Water Resource Recovery Facilities (WRRFs) through Suboxic
TITLE:	Nitrogen Removal

Funding Opportunity Announcement NumberProcurement Instrument NumberNEPA Control NumberCID NumberDE-FOA-0002336DE-EE0009509GFO-0009509-001

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.)
B3.6 Small- scale research and development, laboratory operations, and pilot projects	Siting, construction, modification, operation, and decommissioning of facilities for smallscale 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.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to Carollo Engineers to develop and test novel aeration control technologies for biological wastewater treatment. Specifically, previously developed model predictive aeration control (MPAC) software would be optimized and integrated into existing blower control technology. Pilot versions of the integrated device architecture would be tested in commercial wastewater treatment settings to assess the performance of the integrated MPAC software. The project would be completed over two Budget Periods (BPs), with a Go/No-Go Decision Point in between each BP.

Proposed project activities would include conceptual design work, process modeling, data analysis, computer modeling, software development, material analysis/characterization, and aeration controller testing. MPAC controller software would be developed for a range of application and operating parameters. The MPAC controller software would then be integrated into existing equipment at two commercial wastewater treatment facility locations (discussed below). In-situ aeration controller testing would be performed at both locations, modifying variables of interest to research and improve controller efficiencies (e.g., diurnal flow, load variation, seasonal, temperature changes, etc.). Wastewater samples would be taken and analyzed at both locations to assess wastewater treatment efficiencies and microbial/chemical composition of the samples.

Carollo Engineers would coordinate all project activities and perform administrative functions, data analysis, and computer modeling at its office facilities in Broomfield, CO. Project partners University of Columbia and University of Wisconsin would also perform data analysis and computer modeling at office facilities at their campuses in New York City, NY and Madison, WI, respectively. Pilot testing and in-situ analysis would be performed over a two year period at the Hampton Roads Sanitation District's (HRSD) Virginia Initiative Plant in Norfolk, VA and the Los Angeles County Sanitation District's (LACSD) Pomona Water Reclamation Plant in Pomona, CA. Carollo Engineers would perform pilot testing and analysis at these two locations, with assistance from its project partners APG-Neuros, and NewHub. The Water Research Foundation would assist with stakeholder engagement (e.g., publications, reporting, presentations).

At both the HRSD and LACSD plants, minor modifications would be made to existing equipment to integrate additional monitoring devices, sensors, air flow meters, and air control valves. At LACSD's plant, the MPAC controller software would be integrated with an existing commercial scale blower. No physical modifications to existing facilities or ground disturbance would be performed. Operational testing using the MPAC controller software to control blower operations would be performed in coordination with LACSD and subject to its existing operating procedures and requirements.

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No additional permits or authorizations would be required.

Project work would involve the handling of wastewater and powered equipment. To mitigate potential hazards associated with project work. Carollo Engineers and its project partners would adhere to existing institutional health and safety policies and procedures. Protocols would include employee training and the use of personal protective equipment. Effluent would be treated prior to disposal or recycled into existing systems. LACSD's facility is equipped with by-pass discharge systems to control for any effluent discharge that does not meet local discharge requirements. Carollo Engineers and its project partners would observe all applicable Federal, state, and local health, safety, and environmental regulations.

NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

Advanced Manufacturing Office This NEPA determination does not require a tailored NEPA provision. Review completed by Jonathan Hartman, 08/05/2021

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:

Signed By: Casey Strickland

Date: 8/6/2021

Date:

NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

Field Office Manager review not required Ý

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

https://eere-pmc-hq.ee.doe.gov/GONEPA/ND form V2.aspx?key=24281