PMC-EF2a

(2.04.02)

U.S. DEPARTMENT OF ENERGY
EERE PROJECT MANAGEMENT CENTER
NEPA DETERMINATION

RECIPIENT:MDNR/DE **STATE:** MO

PROJECT TITLE : Missouri Biogas 5 - St. Joseph Landfill/Kansas City Power and Light

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA000052	DE-EE0000131	GFO-0000131-006	EE131

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Order 451.1A), I have made the following determination:

CX, EA, EIS APPENDIX AND NUMBER:

Description:

B5.1 Actions to conserve energy, demonstrate potential energy conservation, and promote energy-efficiency that do not increase the indoor concentrations of potentially harmful substances. These actions may involve financial and technical assistance to individuals (such as builders, owners, consultants, designers), organizations (such as utilities), and state and local governments. Covered actions include, but are not limited to: programmed lowering of thermostat settings, placement of timers on hot water heaters, installation of solar hot water systems, installation of efficient lighting, improvements in generator efficiency and appliance efficiency ratings, development of energy-efficient manufacturing or industrial practices, and small-scale conservation and renewable energy research and development and pilot projects. The actions could involve building renovations or new structures in commercial, residential, agricultural, or industrial sectors. These actions do not include rulemakings, standard-settings, or proposed DOE legislation.

Rational for determination:

The Missouri Department of Natural Resources is proposing to provide $450,000 of ARRA SEP funds to the Kansas City Power & Light Greater Missouri Operations (KCP&L GMO) to expand the landfill gas collection control system at the St. Joseph Landfill south of St. Joseph, MO. The existing City-owned landfill began operation in 1977. It was developed and constructed on a 160-acre parcel and the approved footprint is approximately 200 acres. Fifty-three percent of the permitted capacity remains, which at the current rate of disposal allows for an additional 19 years of operation. The City will maintain and operate the landfill; KCP&L GMO will construct and operate the electrical plant.

The existing land fill gas system has been in operation since 2001 and consists of 13 extraction wells, a blower-flare and a condensate management system for migration control purposes. This proposed project consists of an expanded gas collection system, gas compression and drying equipment, electrical generation, flare, condensate storage, and electrical transmission facilities. The project would include 49 gas collection wells and associated lateral/header gas collection piping to be placed over approximately 80 acres of closed portions of the existing landfill. In addition, approximately 20,000 square feet of an existing gravel parking lot will be repurposed for gas compression, flare, and a 1.6 MW generator that will comprise the electrical plant portion of the project. The proposed project will not expand the footprint of the existing landfill.

The single engine Caterpillar generator will be installed on-site and any excess electricity will be delivered to an existing power line owned by GMO. GMO expects to generate 12,384,537 kW per hour per year of renewable energy and reduce greenhouse gas emissions more than 11,400 metric tons CO_2.

The landfill is surrounded by agricultural land, wooded land and the Pigeon Hill Conservation Area that abuts the west side of the landfill. The Conservation Area was created in 1967 and is managed by the Missouri Department of Conservation as a public recreation area primarily used for target practice and hunting. The nearest residence is 0.6 miles north of the landfill and is separated by wood land.

Potential environmental impacts of the project and associated actions include:

• There would be no or negligible impacts to biological resources, cultural resources, wetlands, floodplains, prime, unique or important farmland, aesthetics or other sensitive resources because the project is located on an existing active landfill site.

• Threatened and Endangered Species – A Heritage Review Report from the Missouri Department of Conservation is attached. Heritage records identify no designated wilderness areas or critical habitats, no state or federal endangered-list species records within one mile of the site or within five miles downstream on streams draining the project site. The report further states that the additional generators should not impact the Pigeon Hill Conservation Area or its use.

• Air Quality – Air quality should improve as a result of the proposed project. Methane gas that is currently being vented directly into the atmosphere will be captured and used to produce electricity. An Authority to Construct permit application was submitted to the Missouri Department of Natural Resources (MDNR) Air Pollution Control Division on October 8, 2010 for the electrical plant portion of the project. KSP&L GMO will obtain an MDNR Operating Permit for the electrical plant portion of the project 30 days after equipment startup. The City of St. Joseph will modify their Part 70 Permit to Operate (Permit Number: OP2006-052) for expansion of the gas collection system.

• Water Quality –The City of St. Joseph has a Missouri State Operating Permit (Permit Number: MO-0109878) for management of industrial storm water runoff from landfill activities. The permit covers the entire landfill and does not need to be amended for this project.
Condensate water extracted from the collected landfill gas will be placed in the City of St. Joseph's existing condensate tank located at the project site and will be transported to the City's waste water treatment pan for disposal.

• Noise – To reduce noise levels, the generator will be housed in a metal enclosure with 3-inch thick walls, a muffler will reduce engine exhaust noise and the fan on the radiator will operate at a slower speed than most standard equipment. According to the manufacturer, the combined noise level of all three pieces of equipment is 85dfBA at 3 meters. The nearest residential receptor is 0.6 miles away and the resulting noise level at the residence would be approximately 35 dBA. Other improvements are not expected to result in noise in excess of existing facilities.

• Waste – The City will modify their existing solid waste permit (Permit Number: 0102102) for the installation of the landfill gas collection system.

• The generator will be housed in a power control module enclosure made from metal to protect it from the weather. Noise associated with the project will be abated by using noise attenuating exhaust structures (18 dBA) on the generator. Per the manufacturer (Caterpillar, G3520C), the engine generator noise level is no more than 85 dBA from the housing when measured three meters in the horizontal plane, five feet from the ground. The muffler will be mounted on the roof of the housing and the exhaust will be no more than 85 dBA as well. Other improvements are not expected to result in noise in excess of existing facilities. The nearest neighbors are more than one half mile away and the wooded areas between the residence and the landfill provide a natural buffer.

The electrical portion of the project will be constructed on clean fill that was placed outside of the footprint of the existing landfill to provide operations support for the landfill personnel.
Disturbed solid waste that may contain asbestos or PCBs will be relocated to an active subtitle D cell at the facility. A 30 day advance notice for possible asbestos disturbance will be filed with the MDNR Air Pollution Division.

DOE has determined that the associated construction of the new landfill gas to energy plant will not have a significant impact to human health or the environment. The proposed project will result in increased energy generation from the captured landfill gas and a reduction in conventional fossil fuel energy consumption; therefore, the proposed project is categorically excluded from further NEPA review under CX B5.1 "actions to conserve energy".

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

This EF2a was prepared by Chris Paulsen.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Kristin Ker Date: 1/25/2011
NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

☐ Field Office Manager review required

NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON: