



Department of Energy

Golden Field Office
1617 Cole Boulevard
Golden, Colorado 80401-3393

April 30, 2010

Ms. Pamela Small
Grants Manager
Memphis Gas, Light, Water
125 N. Main Street, Suite 336
Memphis, TN 38103

Dear Ms. Small:

SUBJECT: Award No. DE-EE0000955; City of Memphis, TN Energy Efficiency and Conservation Block Grant

In accordance with the EF-1 submitted April 15, 2010 this letter serves to notify the Recipient that conditions have been revised in the National Environmental Policy Act (NEPA) Requirements provision in the Special Terms and Conditions of the award. The Project Officer and the NEPA Compliance Officer have reviewed the information submitted and have found the following information to be acceptable.

NEPA restricted actions lifted by DOE are shown below:

Activity Number and Title: Activity 6 – Cogeneration at M.C. Stiles Wastewater Treatment Plant

DOE Determination:

The City of Memphis, Tennessee will develop a cogeneration facility, through a design-build contract at the existing M.C. Stiles Wastewater Treatment Plant, located at 2302 N. Second Street. EECBG funds will be used to procure the necessary equipment and reconfigure existing piping to develop a first phase cogeneration facility. The facility will utilize biogas currently generated by the existing anaerobic wastewater lagoons to power new internal combustion engines or micro-turbines. The proposed facility will be constructed on previously disturbed land located adjacent to and immediately south of the plant's existing blower building and primary and secondary flare systems. Biogas infrastructure exists between the sludge lagoons and the blower building and flares, therefore limited piping work would be required. A review of FEMA Flood Insurance Rate Maps show that the project location and the plant itself is outside the 500 year floodplain. The City has stated that ground disturbance will occur in existing roadways, drives, parking lots and/or storage areas.

DOE has made a final NEPA determination for Activity 6, which is categorically excluded from further NEPA review.

The following activities are categorically excluded from further NEPA review, but remain subject to the Waste Stream and Historic Preservation provisions set forth in the Special Terms and Conditions of your award:

Activity Number and Title: Activity 1 – Affordable Housing: Energy Efficiency Improvements for Homeowners
Activity 2 – Affordable Housing: Energy Efficiency Improvements for Landlords
Activity 3 – Affordable Housing: Energy Efficiency Rehabilitation through Non-Profits



Activity 5 – Programmable Thermostat Installation for Existing Housing was categorically excluded under the conditions of the original award.

Prohibited Actions:

A final NEPA determination has not been made for Activity 4 – Commercial & Industrial Customer Comprehensive Services Program, therefore you are prohibited from implementing these project activities until NEPA has made a final determination. This restriction does not preclude you from conducting audits, assessments, and studies; engaging in outreach and administrative work related to the program; and purchasing any necessary equipment or related materials.

You are restricted from taking any action using federal funds, which would have an adverse effect on the environment or limit the choice of reasonable alternatives prior to DOE providing either a NEPA clearance or a final NEPA determination regarding the project. If you move forward with activities that are not authorized for federal funding by the DOE Contracting Officer in advance of the final NEPA decision, you are doing so at risk of not receiving federal funding and such costs may not be recognized as allowable cost share.

Requirements:

Prior to the expenditure of Federal funds to implement the above activity, the Recipient shall obtain all required planning and/or building permits/approvals (mechanical, electrical, plumbing, etc.). Prior to the expenditure of Federal funds to implement the above activity, the Recipient shall obtain the required air permit (permission to construct, permission to operate, etc.) from the appropriate state and/or local regulatory agency.

Prior to the expenditure of Federal funds the Recipient has the affirmative responsibility to ensure that it has a waste management plan addressing waste generated by their proposed actions. The plan will describe the plan to dispose of any sanitary or hazardous waste, e.g. construction and demolition debris, old light bulbs, lead ballasts, piping, roofing materials, discarded equipment, debris, packaging materials, asbestos, etc. generated as a result of the proposed project. The Recipient must ensure that it will comply with all federal, state and local regulations for waste disposal.

Prior to the expenditure of Federal funds to implement the above activity, the Recipient has the affirmative responsibility to ensure compliance with Sec. 106 of the National Historic Preservation Act (NHPA). Section 106 applies to historic properties, districts, etc. that are listed in or eligible for listing in the National Register of Historic Places. Supporting documentation will be reviewed by the DOE as part of its post-award monitoring.

Please note that the Recipient shall ensure the safety and structural integrity of any repair, replacement, construction and/or alteration performed under this project.

These changes will be incorporated into the next formal modification. Questions or comments may be addressed to the DOE Project Officer, Tim Butler, at 720-356-1605 or timothy.butler@go.doe.gov.

Sincerely,



Sara Wilson
Contracting Officer

April 26, 2010

Whitney Fiore
EECBG Program

RE: Response to NEPA review questions

1. The new images provided are from 2009. Image "Stiles" shows the overall layout of the M.C. Stiles WWTP with lagoon 1 and lagoon 2, dewatering building, and existing blower and flare labeled. Image "prop_cogen" is a zoomed in view of the area where the proposed cogeneration facility will be placed. Ground disturbance will occur in an existing gravel lot. This location is on City property and no previously undeveloped area will be disturbed.
2. In 2006 the M.C. Stiles WWTP completed an upgrade of its biogas collection system. Plans of the upgrade will be attached on the EF-1 webpage. The WWTP currently has 2 covered anaerobic wastewater lagoons. The biogas is collected from this process and some of it is sold to local industry via contract and the remaining is flared. The biogas piping currently comes to a centralized location at the blower building. This is an ideal spot for the cogeneration facility. A minor reconfiguration of the piping will need to be made to incorporate the new facility. The blower building also has existing electricity.
3. There is not an existing cogeneration facility. The City has elected to do a design/build on this newer technology. This will give the City insight on how to most effectively use the heat and power. The RFP will be submitted on April 30, 2010 as stated in the submittal on April 16, 2010. The project will encompass the use of both heat and power to be used in existing plant processes either by using internal combustion engines or micro-turbines.

The awarded EECBG Grant is \$1,772,399. The City anticipates the overall project will exceed this cost. If costs exceed this amount, then a "phased" approach must be proposed. This approach will give the City a functioning cogeneration facility but may not produce the maximum amount of heat and power. A building enclosure will not be constructed with the funds. At later dates, the facility can be expanded with City funds to add additional internal combustion engines or micro-turbines in series to maximize heat and energy output.

It is envisioned that the DOE funds will be used to procure all necessary equipment and reconfigure the existing biogas piping to incorporate a first

phase cogeneration facility. The bidder has been given several options on where the heat and power can be utilized at the WWTP. Options include providing heat and power to the dewatering building, using heat for drying dewatered sludge, or heating the lagoons. Also, the bidder has the option to provide a solution that has not been suggested by the City. Once the bids are received, the City will choose the best submittal for utilizing cogeneration.

4. Piping is proposed for the biogas. As stated above, the biogas piping currently comes to a centralized location at the blower building. A minor reconfiguration of the piping will need to be made to incorporate the facility. Once the internal combustion engines or micro-turbines convert the biogas to heat and power, additional piping and conduit will need to be installed to the proposed facilities in the options listed above. Ground disturbance will occur in existing roadways, drives, parking lots, or storage areas. No previously undeveloped area will be disturbed. The attached aerial images show possible pipeline paths.
5. The appropriate building permits from the local Code Enforcement Agency will be obtained (mechanical, electrical, plumbing). An air permit would also have to be obtained from the Memphis and Shelby County Health Department. The City currently has a permit for the existing flare. Based on the area of ground disturbance, the appropriate state permit from the Tennessee Department of Environment and Conservation will also be obtained.
6. The biogas will be piped through the existing gas network to the centralized location at the blower building. Once the cogeneration facility is placed, a small amount of new piping will need to be installed to transport the biogas to the cogeneration unit. This area is shown on the attached map labeled “prop_cogen.”



A C WHARTON, JR. - Mayor
GEORGE M. LITTLE - Chief Administrative Officer
DIVISION OF PUBLIC WORKS
DWAN L. GILLIOM - Director
Environmental Engineering

April 15, 2010

TENNESSEE

Pamela Small
City of Memphis
125 North Main Street
Memphis, TN 38103
Pamela.jacksonsmall@memphistn.gov

Dear Ms. Small:

Below is the requested information for the Department of Energy due April 16, 2010

Activity 6. Cogeneration at M.C. Stiles Wastewater Treatment Plant

1. Submission specifically identifying all activities to be funded under this program

The City of Memphis will use the DOE funding to construct a design/build project for a cogeneration facility. The funding will be applied to the entire project. Based on recent estimates, the City believes the total project will exceed the awarded grant. This is why the City has chosen the design/build route for construction around the amount of available funding. The facility will use existing biogas from covered anaerobic lagoons which will be converted into heat and power to be used in existing plant processes either by using internal combustion engines or micro-turbines.

2. Detailed timeline of when you expect the RFPs or other procurement actions will be complete.

The bid specifications for a design/build cogeneration facility will be submitted into the City's Oracle system on April 30, 2010. Once approved, an advertising notice will be placed in *The Daily News* on May 25 and 26, 2010. A mandatory pre-bid conference will be held on June 23, 2010. Bids will be received on July 23, 2010. The information from all proposals found to be technically acceptable will be reviewed and analyzed by the Environmental Construction staff and appropriate Stiles Plant personnel. Based upon evaluations of the technical review and cost proposals, the review team may elect to conduct oral interviews. Award of the contracts will normally be made to that proposer who has been determined to be the most responsive and who offers the most advantageous final cost.

The City will review bids and make recommendations to the Purchasing Department by August 6, 2010 and then begin the contract process through City Council and other offices. We project a Notice to Proceed being issued in December 2010. Due to potential long lead time for equipment and deliveries, the City anticipates 12 months for project completion.

3. NEPA EF1 form completed on line at the DOE PMC website specifically identifying planned retrofits together with the attachment of supporting documentation, or alternatively

Completed on line and submitted on April 15, 2010, see attached.

4. Completed NEPA SOW accepting terms including bounded categories of activities to be performed. This form is to be an attachment to an EF-1 completed on line at the DOE PMC website. Please confer with your DOE Project Officer regarding both process and most expedient approach to address the lifting of the NEPA condition for this project.

Completed EF1

Sincerely,

A handwritten signature in black ink, appearing to read "Paul Patterson". The signature is fluid and cursive, with a long horizontal stroke at the end.

Paul Patterson
Administrator of Environmental Engineering

cc: Dwan Gilliom, Director of Public Works
Scott Morgan

cogen_submittal4-16-2010.doc

PMC-
EF1

(2/06/02)

U.S. DEPARTMENT OF ENERGY
EERE PROJECT MANAGEMENT CENTER
ENVIRONMENTAL CHECKLIST
(To Be Completed by Potential Recipient)



**PART I: General
Information**

DOE Project Officer: Timothy Butler

Date: 4/15/2010

Project Title: Cogeneration at M.C. Stiles Wastewater Treatment Plant

ST: TN

Organization Name: City of Memphis Public Works

Solicitation Number: DE-FOA-0000013

Award No: DE-EE0000955

1. Please describe the intended use of DOE funding in your proposed project. For example, would the funding be applied to the entire project or only support a phase of the project? Describe the activity as specifically as possible, i.e. planning, feasibility study, design, data analysis, education or outreach activities, construction, capital purchase and/or equipment installation or modification. If the project involves construction, also describe the operation of the completed facility/equipment.

The City of Memphis will use the DOE funding to construct a design/build project for a cogeneration facility. The funding will be applied to the entire project. Based on recent estimates, the City believes the total project will exceed the awarded grant. This is why the City has chosen the design/build route for construction around the amount of available funding. The facility will use existing biogas from covered anaerobic lagoons which will be converted into heat and power to be used in existing plant processes either by using internal combustion engines or micro-turbines.

2. Does any part of your project require review and/or permitting by any other federal, state, regional, local, environmental, or regulatory agency? Yes No

3. Has any review (e.g., NEPA documentation, permits, agency consultations) been completed?
 Yes No If yes, is a finding or report available and how can a copy be obtained?

4. Is the proposed project part of a larger scope of work? Yes No If yes, please describe.
 Based on recent estimates, the City believes the total project will exceed the awarded grant. This is why the City has chosen the design/build route for construction around the amount of available funding. We anticipate this being the first of several phases to fully develop a cogeneration facility.

Do you anticipate requesting additional federal funding for subsequent phases of this project?

Yes No If yes, please describe.

5. Does the scope of your project **only** involve one or more of the following:

- Information gathering such as literature surveys, inventories, audits,
- Data analysis including computer modeling,
- Document preparation such as design, feasibility studies, analytical energy supply and demand studies, or
- Information dissemination, including document mailings, publication, distribution, training, conferences, and informational programs.

Preparer:
Scott Morgan
Business Contact:
Paul Patterson

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Email:
paul.patterson@memphistn.gov

PART II: Environmental Considerations

Section A Conditions or special areas are present, required, or could be affected by your project:

1. Clearing or Excavation

Approximately 5,000 sf portion of unpaved parking area will be modified to install the cogeneration equipment. This will include concrete, asphalt, and piping. The site will be located at 2303 North Second Street, Memphis, TN 38127. This is City property with an active wastewater treatment plant. No previously undeveloped area will be disturbed.

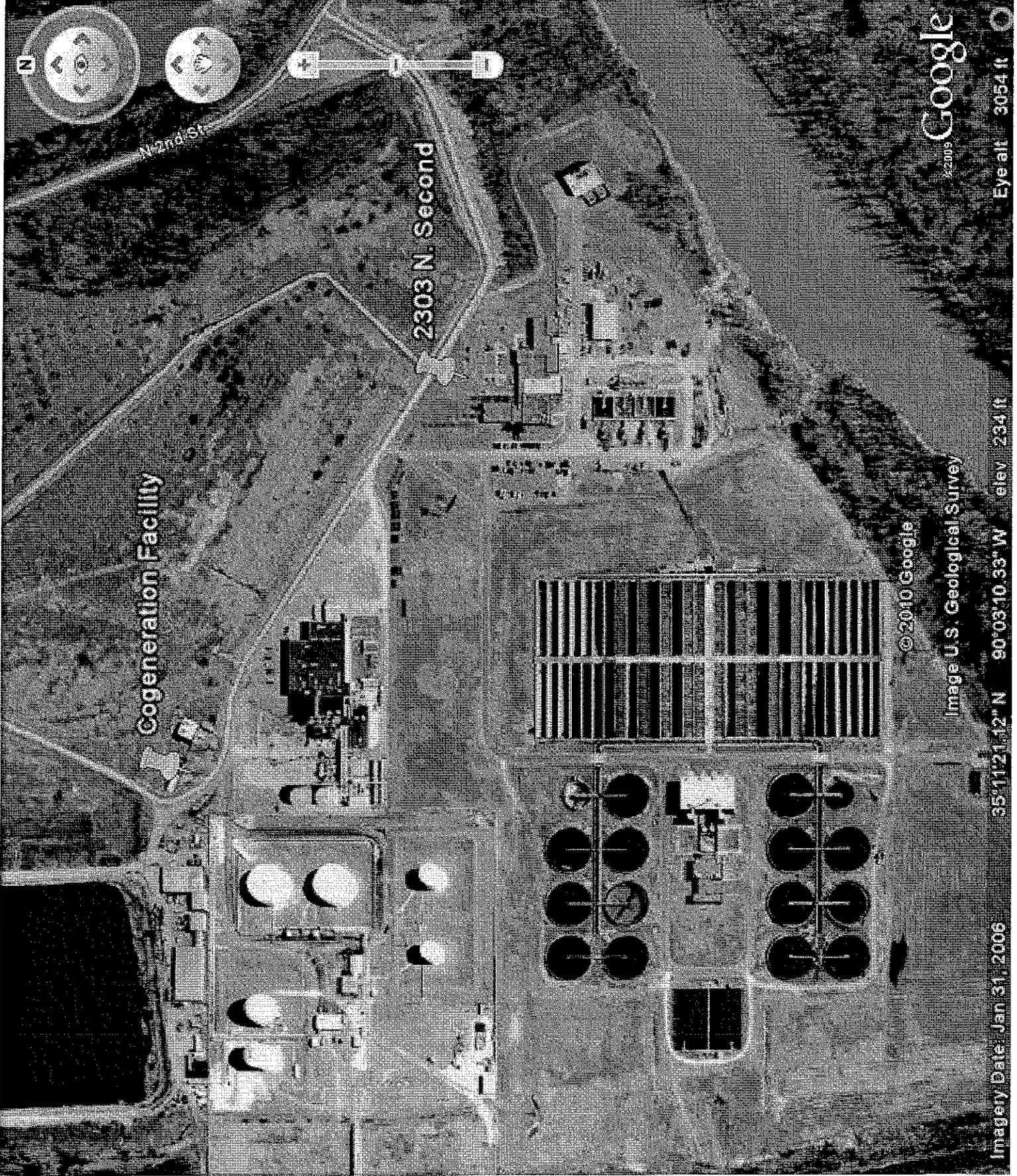
3. New or Modified Federal/State Permits And/or Requests for Exemptions

Appropriate building permits from the local Code Enforcement Agency

Section B. Would your project use, disturb, or produce any chemicals or biological substances? (i.e., pesticides, industrial process, fuels, lubricants, bacteria)

Section C. Would your project require or produce any radiological materials?

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N

N 2nd St

2303 N. Second

Cogeneration Facility

Google

©2005

Eye alt 3054 ft

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Image U.S. Geological Survey

35°11'21.42" N 90°03'10.33" W elev 234 ft

Imagery Date: Jan 31, 2006