

PMC-EF2a

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



(2.04.02)

RECIPIENT: Harris County

STATE: TX

PROJECT TITLE : Harris County North Bayou Central Plant

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000013	DE-EE0000914		0

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:

Harris County, Texas proposes to use \$13,773,400.00 of EECBG funds to support the purchase of an energy efficiency package to be installed within the newly constructed Harris County North Bayou Central Plant (NBCP). The proposed project is part of a larger scope of work which involves the construction of the NBCP building, however; EECBG funds will be will only be used toward the purchase of energy efficient equipment and the any costs associated with labor/installation of the equipment.

The current benefit of the project is the new system will provide some measure of redundancy on the overall chill water and heating system by about 1,200 tons of shared capacity between two plants that are on a separate power grid. Once completed the new plant will curb emissions and reduce energy consumption by approximately 10% and all noise levels will be within the COH guidelines. The new plant will also allow for expansion within the county downtown complex as population of the region increases and will increase the overall efficiency of the Energy Production Systems (chill water and hot water production) serving new, proposed, and existing buildings. Additionally, the facility will allow new buildings to come online in the future without increasing emissions and will support future county growth by making additional tonnage available with a negligible increase in emissions.

Potential environmental impacts of the project and associated actions include:

- Air Quality – A decrease of emissions by 10% is anticipated once the project is completed; negligible increase of emissions anticipated in support of future county growth through provision of additional tonnage. The completed plant would emit products of combustion (NOx, CO, VOC, PM, and SO2) through a stack; emissions do not have the potential to exceed 250 tons per year and the vented stack will be built so it complies with applicable Texas Council of Environmental Quality requirements.
- Wastewater – the NBCP will discharge approximately 55,555 gallons of wastewater daily which will be treated at the City of Houston Southeast Wastewater Treatment Plant. No impact to groundwater is anticipated.
- Noise – All noise levels will be within established COD guidelines.
- Solid Waste – will be disposed of at a municipal solid waste facility in accordance with normal County procedures and State requirements.

There will be no impacts to biological resources, cultural resources, wetlands, land use, prime farmland, or other sensitive resources as the project location is within a highly developed urbanized area.

No public controversy was noted in the environmental questionnaire.

Currently, Harris County buildings located north of Buffalo Bayou (please see attached map) are on stand-alone,

inefficient energy plants. Buildings south of the bayou are run on an existing central plant that is using outdated equipment. The rationale for the system design and application is that the NBCP will supplement a system which will soon be unable to provide the heating and cooling capacity needed for the Harris County downtown complex as well as eliminate the need to retrofit individual plants for buildings north of the bayou. Other designs were considered and the proposed design was selected as it is the most energy efficient and cost effective.

The construction of the NBCP follows the demolition of an existing historic building, the Iron Mountain warehouse, which was documented in a HABS III report, submitted to the State Historic Preservation Office and to the Department of Energy. Its demolition coincides with the North Bayou Central Plant project only because of site involvement. The demolition of the Iron Mountain building is a separate project that is separately funded from the construction of the NBCP and is part of an overall plan to construct future buildings included within joint City of Houston and Harris County Projects.

The proposed footprint for the new NBCP plant will only occupy 1/5 of the Iron Mountain site. All construction activities associated with the NBCP are covered under a separate action item and in no way will any federal funding supplied by EECBG be used for the physical construction of the new NBCP building.

Harris County will only use DOE granted federal funds for the purchase of materials outlined in the energy efficiency package and its installation on the NBCP project. Funds will primarily be expended on the purchase of chillers, electrical wiring, steel, piping, HVAC pumps and ductwork, water softeners, fire tube boilers, and associated equipment and labor which will be used in the establishment/installation of energy efficient equipment. Once fully constructed with all energy efficient components installed, the NBCP will meet the requirement for a Leadership in Energy and Environmental Design (LEED) certified plant. Table 1 contains a breakdown of equipment to be purchased and costs associated with time and materials for installation.

Table 1. Breakdown of Energy Efficiency Purchases for the Proposed NBCP

Purchase Item	Material & Labor	Material	Labor	\$
Insulated Piping & Valves	\$2,892,056.00	\$2,235,234.00	\$656,822.00	
AHU's	\$95,632.00	\$90,000.00	\$5,632.00	
HVAC Ductwork	\$352,821.00	\$340,350.00	\$12,471.00	
Controls	\$630,000.00	\$630,000.00	--	
HVAC pumps	\$155,935.00	\$145,734.00	\$10,201.00	
Water Softeners	\$81,773.00	\$80,486.00	\$1,287.00	
Fire Tube Boilers	\$542,421.00	\$525,526.00	\$16,895.00	
Water Cooled Centrifugal Chillers	\$2,909,654.00	\$2,900,000.00	\$9,654.00	
Field Erected Cooling Towers	\$1,305,792.00	\$1,300,000.00	\$5,792.00	
Low and Medium Voltage SWGR	\$3,602,156.80	\$3,274,688.00	\$327,468.00	
Individual Motor Starters	\$935,000.00	\$850,000.00	\$85,000.00	
Distribution Piping	\$2,970,000.00	\$2,970,000.00	--	
Totals	\$16,473,240.80	\$15,342,018.00	\$1,131,222.80	

Total cost for the NBCP project based on projections from Jacobs Engineering is estimated to be \$29,882,040.85. Requested EECBG funding comprises approximately 46.1% of the total project cost. On June 18, 2010, DOE received signed documentation from the recipient clearly delineating that the proposed project can and would be built without government funds. The primary need for EECBG funding will allow for procurement of the more efficient central plant equipment that will support the long term EE strategy and result in a 10% energy savings for buildings within the district.

The proposed project is planned to begin with the procurement process on 8/24/2010, initial construction is approximated to start on 11/1/2010 and final construction is planned to be completed on 5/1/2012. The Harris County has supplied DOE with a new and revised site plan indicating pit locations and proposed pipe routing for the project. Supplied mechanical (HVAC) schematics include detailed information for condensed water and chilled water piping, and heating hot water plans. No additional equipment or energy will be required to provide water into the system.

Some trenching will be necessary, however, specifics on trenching activities are currently unknown and additional details are to be supplied by Jacobs Engineering with the completion of final project design. No environmental permits have been applied for to date; however, application for permits will be initiated prior to project construction.

Public concerns associated with the project were discussed and addressed during public meetings associated with the historic preservation of the Iron Mountain warehouse. Additionally, Harris County has taken steps to alleviate any issues by completing and submitting a HABS III report to both the State of Texas and the DOE.

Waste Stream Requirements:

Prior to the expenditure of Federal funds to implement any of the above-mentioned activities, Harris County 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, 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.

NHPA

Harris County has been in coordination with the State Historic Preservation Office (SHPO) to review the proposed project and ensure compliance with Sec. 106 of the National Historic Preservation Act (NHPA). Harris County has received concurrence from SHPO for project activities and supplied the DOE with the supporting documentation.

Based on the information above and the approximate 10% energy savings offered to multiple individual buildings from construction of the NBCP, this action is categorically excluded under CX number B 5.1, Actions to Conserve Energy, and C12, Siting, construction, and operation of energy systems.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Insert the following language in the award:

You are required to:


If you intend to make changes to the scope or objective of your project you are required to contact the Project Officer identified in Block 11 of the Notice of Financial Assistance Award before proceeding. You must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved.

Note to Specialist :

None Given.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:


NEPA Compliance Officer

Date:

7/1/10

FIELD OFFICE MANAGER DETERMINATION

Field Office Manager review required

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

- Proposed action fits within a categorical exclusion but involves a high profile or controversial issue that warrants Field Office Manager's attention.
- Proposed action falls within an EA or EIS category and therefore requires Field Office Manager's review and determination.

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature:

Field Office Manager

Date:
