

ITEM # 41  
DATE 06-24-08

## COUNCIL ACTION FORM

**SUBJECT: REPORT OF BIDS AND DELAY AWARD FOR ELECTRIC SERVICES  
POWER PLANT NITROGEN OXIDE REDUCTION**

### **BACKGROUND:**

This project is to furnish and install NO<sub>x</sub> reduction equipment on Units 7 and 8 at the Power Plant. The equipment is designed to reduce emissions of nitrogen oxides (NO<sub>x</sub>) in keeping with the USEPA Clean Air Interstate Rule (CAIR). Beginning in 2009, this rule requires facilities that emit NO<sub>x</sub> in excess of 0.15 lb NO<sub>x</sub> per million Btu heat input to obtain allowances from facilities with emissions under the 0.15 lb threshold. This program is known as "cap and trade" and in effect creates a market for NO<sub>x</sub> allowances. There is considerable uncertainty regarding the cost to obtain these allowances, but staff expects the value could be in a range of \$1000/ton NO<sub>x</sub> to \$4000/ton NO<sub>x</sub>. Given an allowance price of \$2000/ton, staff expects that NO<sub>x</sub> allowances could cost \$2,000,000 per year for Units 7 and 8.

Units 7 and 8 currently emit NO<sub>x</sub> at a rate of approximately 0.37 and 0.39 lb NO<sub>x</sub>/MMBtu respectively. The City has awarded a contract to Burns & McDonnell, Kansas City, MO, to develop plans and specifications for NO<sub>x</sub> reduction systems for Units 7 and 8. We expect these systems to include overfire air distribution equipment, burner retrofits and fuel oil igniters. These systems will stage and distribute combustion air in order to reduce peak flame temperatures and subsequent NO<sub>x</sub> formation.

NO<sub>x</sub> reduction projects for both Units 7 and 8 are currently budgeted for \$4,500,000 in capital over three fiscal years. The approved FY 2007/08 CIP budget includes \$300,000 for engineering services.

Staff believes it will be fiscally advantageous to complete NO<sub>x</sub> reduction systems on Units 7 and 8 sooner, as the City will be responsible for purchasing allowances for excess NO<sub>x</sub> emissions beginning on January 1, 2009. Our goal is to manage this project to install equipment on Unit # 7 in February 2009 and on Unit # 8 in April 2009.

Staff plans to include incentive payments in the equipment and installation contract according to the level of NO<sub>x</sub> reduction achieved. This contract may be awarded to a single firm to provide NO<sub>x</sub> reduction on both units, or it may be awarded to two different firms, one for each unit, depending upon proposals received.

On June 19, 2008, bids were received as demonstrated on the attached report. As part of the review process, information contained in the proposals must be sent to a third party furnace modeling firm that will enter the data into a model of the City's boilers. This modeling will demonstrate which proposed equipment offers the City the best value for lowering NO<sub>x</sub> emissions. This process may take several weeks.

After completion of the modeling, staff will be in a position to recommend the best equipment and contractor for installation of NOx reduction measures at the Power Plant. Therefore it is the recommendation of staff that City Council accept the report of bids and delay award until the furnace modeling evaluations are complete.


**ALTERNATIVES:**

1. Accept the report of bids and delay award for the Electric Services Department Power Plant Nitrogen Oxide Control Project.
2. Award a contract to the apparent low bid.

**MANAGER'S RECOMMENDED ACTION:**

It is essential for the Power Plant to maintain a positive environmental record in the community and to be in compliance with EPA mandated rules and regulations. It is also imperative to achieve this in the most cost effective way possible. By choosing alternative No. 1, the staff will be able to determine the expected performance measures of proposed equipment and thereby determine which type of equipment will enable the Plant to achieve the greatest efficiencies in lower NOx emissions.

Therefore, it is the recommendation of the City Manager that the City Council adopts Alternative No. 1, accepting the report of bids and delaying award for the Electric Services Department Power Plant Nitrogen Oxide Control Project.

 <b>INVITATION TO BID NO. 2008-165 POWER PLANT NITROGEN OXIDE REDUCTION PROJECT</b>				
Company Name of Bidder	Advanced Combustion Technology, Inc. Hooksett, NH	Power & Industrial, Corp. Donora, PA	Power & Industrial, Corp. Donora, PA	Combustion Components Associates, Inc Monroe, CT
Bid Security	Yes	Yes	Yes	No
<b>ITEM NO. 1</b>				<b>Non-Responsive</b>
Furnish & Install Unit No. 7		<b>NO BID</b>	<b>No Bid</b>	<b>Non-Responsive</b>
Materials & Equipment	\$1,080,140.00			<b>Non-Responsive</b>
Labor	\$1,060,000.00			
Subtotal	\$2,140,140.00			
<b>ITEM NO. 2</b>			<b>Alternate</b>	<b>Non-Responsive</b>
Furnish & Install Unit No. 8				<b>Non-Responsive</b>
Materials & Equipment	\$1,538,060.00	\$3,220,228.00	\$2,691,211.00	<b>Non-Responsive</b>
Labor	\$1,166,000.00	\$3,081,558.00	\$2,495,166.00	
Subtotal	\$2,704,060.00	\$6,301,786.00	\$5,186,377.00	
<b>DEDUCT IF ITEM NO. 1 &amp; ITEM NO. 2 ARE SELECTED</b>				
<b>DEDUCT AMOUNT</b>	<b>(\$100,000.00)</b>	<b>N/A</b>	<b>N/A</b>	
<b>ALTERNATE: New Flow Element Unit No. 7</b>				
equipment	\$55,000.00			
labor	\$25,000.00			
Subtotal	\$80,000.00			
<b>ALTERNATE: New Flow Element Unit No. 8</b>				
equipment	\$55,000.00	\$139,833.00	\$269,767.00	
labor	\$25,000.00	\$119,118.00	\$222,986.00	
shipping		\$40,000.00	\$36,000.00	
Subtotal	\$80,000.00	\$298,951.00	\$528,753.00	
Addenda No. 1	Yes	Yes	Yes	
Addenda No. 2	Yes	Yes	Yes	
Addenda No. 3	Yes	Yes	Yes	
Exceptions & Clarifications	Yes	Yes	Yes	
Affirmative Action				
Proposed Subcontractors				
Installation	Moorhead Machinery Capitol City Boiler Plibrico Company LLC	Enerfab Exothermic Engineering	Enerfab Exothermic Engineering	
Equipment	Metctfab Burners Flexter Forney Ignition Beck Air Monitor	EFFOX Beck Eastern Instruments	EFFOX Beck Eastern Instruments	
Site Visit	Yes	Yes	Yes	



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Company Name of Bidder	Advanced Combustion Technology, Inc. Hooksett, NH	Power & Industrial, Corp. Donora, PA	Power & Industrial, Corp. Donora, PA	Combustion Components Associates, Inc Monroe, CT
<b>NO<sub>x</sub> Reduction Project</b>	<b>Unit No. 7</b>			<b>Non-Responsive</b>
Low NO <sub>x</sub> burner system	\$132,500.00			
Overfire air system	\$413,400.00			
Igniters	\$132,500.00			
Scanner, if applicable	\$0.00			
Blower Skid	\$53,000.00			
Actuators	\$25,440.00			
Electrical	\$53,000.00			
Windbox Modifications	\$0.00			
Insulation and lagging	\$132,500.00			
Lead/Asbestos Abatement	\$0.00			
Demolition	\$106,000.00			
Mechanical Installation	\$954,000.00			
Pre-Outage Testing	\$10,600.00			
Furnace CFD Model Study	\$53,000.00			
Start-Up	\$10,600.00			
Commissioning	\$10,600.00			
Performance Bond	\$42,400.00			
Training	\$10,600.00			
	<b>\$2,140,140.00</b>			
	<b>Unit 8</b>			
Low NO <sub>x</sub> burner system	\$636,000.00	\$656,716.00	\$656,716.00	<b>Non-Responsive</b>
Overfire air system	\$277,720.00	\$673,418.00	\$396,746.00	
Igniters	\$106,000.00	\$212,400.00	\$212,400.00	
Scanner, if applicable	\$0.00	\$0.00	\$0.00	
Blower Skid	\$0.00	\$112,135.00	\$112,135.00	
Actuators	\$120,840.00	\$146,875.00	\$136,799.00	
Electrical	\$53,000.00	\$69,860.00	\$69,860.00	
Windbox Modifications	\$53,000.00	\$19,872.00	\$19,872.00	
Insulation and lagging	\$132,500.00	\$199,946.00	\$109,673.00	
Lead/Asbestos Abatement	\$0.00	\$5,607.00	\$5,607.00	
Demolition	\$106,000.00	\$2,956,010.00	\$2,343,951.00	
Mechanical Installation	\$1,060,000.00	\$0.00		
Pre-Outage Testing	\$10,600.00	\$53,379.00	\$53,379.00	
Furnace CFD Model Study	\$53,000.00	\$57,304.00	\$57,304.00	
Start-Up	\$10,600.00	\$9,767.00	\$9,767.00	
Commissioning	\$10,600.00	\$26,017.00	\$26,017.00	
Performance Bond	\$63,600.00	\$72,946.00	\$62,730.00	
Training	\$10,600.00	\$11,439.00	\$11,439.00	
Misc. Eng & Project Mgmt		\$978,125.00	\$865,984.00	
<b>Total</b>	<b>\$2,704,060.00</b>	<b>\$6,281,816.00</b>	<b>\$5,150,379.00</b>	