



City of Grand Island

Tuesday, January 22, 2008

Council Session

Item G5

**#2008-17 - Approving Bid Award - Mercury Control System -
Platte Generating Station**

Staff Contact: Gary R. Mader; Wesley Nespor

Council Agenda Memo

From: Gary R. Mader, Utilities Director
Wesley Nespor, Asst. City Attorney/Purchasing

Meeting: January 22, 2008

Subject: Bid Award - PGS Mercury Control System

Item #'s: G-5

Presenter(s): Gary R. Mader, Utilities Director

Background

The federally issued Clean Air Mercury Rule (CAMR) caps mercury emissions of all of the nation's power plants by mandating states to implement plans to meet a specified national budget limit of emissions. The City is required by this rule to reduce the annual mercury emissions from the Platte Generating Station in 2010 and make further reductions in 2018, by either installing mercury emission control equipment or purchasing mercury emission allowances. In September 2006, the City authorized Black & Veatch to perform consulting services for this mercury rule. These services include engineering and economic evaluations, detailed system design, equipment and contractor selection, and environmental permitting. As a result of the evaluations, Black & Veatch recommended the addition of mercury control equipment to Platte. The recommended system will inject a carbon powder into the boiler exhaust gas, which combines with mercury in the gas stream. The carbon, holding the mercury, is then collected in a large fabric filter, or baghouse. The collected carbon can then be conveyed and mixed with other boiler ash products and disposed of in a conventional manner.

Black & Veatch prepared bid specifications for the mercury removal system equipment. In addition to the carbon injection system and fabric filter, these specifications included the additional ductwork for tying the system into the existing plant exhaust gas system and a 2000-horsepower booster fan to overcome the additional flow resistance of the added equipment. Additional future contracts will be required for the ash removal system, electrical switchgear, and the installation of the equipment. The cost of the total mercury removal project is currently estimated at \$35,000,000. The Electric Department '07 – '08 Budget includes \$8,000,000 for this project.

Discussion

The specifications for the Mercury Control System were advertised and issued for bid in accordance with the City Purchasing Code. Responses were received from the following bidders. The engineer's estimate for this phase of the project was \$9,700,000.00.

<u>Bidder</u>	<u>Bid Price</u>
SPE-Amerex, Batavia, IL	\$6,135,379.00
Hamon Research-Cottrell, Inc., Somerville, NY	\$7,734,200.00
Clyde Bergemann US, Inc., Hanover, MD	\$7,594,115.00

The bid from SPE-Amerex does not include sales tax, but is otherwise compliant with specifications and less than the engineer's estimate. The addition of sales tax to the SPE-Amerex puts the total contract bid amount at \$6,262,839.00.

The consulting engineer for this project, Black & Veatch, conducted a detailed evaluation of the bids for compliance with the technical and performance specifications, for compliance with the specified contract terms and conditions, and for life of equipment operating and maintenance expense. The engineer's evaluation report is attached.

The complete contract is a 460 page document; available in the offices of the Utilities Department, Legal Department and City Clerk. Black & Veatch recommends that the bid from SPE-Amerex be accepted as the lowest compliant bid. The Utilities Department concurs in that recommendation

Alternatives

It appears that the Council has the following alternatives concerning the issue at hand. The Council may:

1. Move to approve
2. Refer the issue to a Committee
3. Postpone the issue to future date
4. Take no action on the issue

Recommendation

City Administration recommends that the Council award the contract for PGS Mercury Control System to SPE-Amerex from Batavia, IL, as the low responsive bidder, in a contract amount of \$6,262,839.00; which includes sales tax.

Sample Motion

Move to approve award of the PGS Mercury Control System contract to SPE-Amerex in the amount of \$6,262,839.00.



City of Grand Island
CGI Hg Control Engineering Services

B&V Project 145805
B&V File 62.0201
January 10, 2008

Grand Island Utilities Department
1035 West Wildwood Dr
Grand Island, NE 68802-1968

Subject: Mercury Control System Equipment
Bid Evaluation

Attention: Tim Luchsinger
Assistant Utility Director

Dear Tim:

Black & Veatch (BV) has evaluated the Mercury Control System Equipment Bids, Submitted per Specification 145805.62.0201. A summary of our evaluation is attached. It is Black & Veatch's opinion that the Bid from SPE Amerex (SPE) is the best and lowest bid. The evaluation price for the equipment and services proposed by SPE is \$6,262,839 which is lower than the Engineer's estimate of \$9,700,000.

Introduction. Specification 145805.62.0201, for engineering and furnishing Mercury Control System Equipment at Platte Generating Station, was issued to the following bidders on October 10, 2007.

- Babcock & Wilcox
- Clyde Bergeman
- Foster Wheeler
- Hamon Research Cottrell
- SPE Amerex
- Allied Environmental Solutions
- Ducon Technologies
- Alstom
- Siemens Wheelabrator

Clyde Bergeman (CB), Hamon Research Cottrell (HRC), and SPE indicated their intention to bid and successfully pre-qualified to submit a proposal. B&W, Foster Wheeler, Allied Environmental Solutions, Ducon Technologies, and Siemens Wheelabrator declined to bid due to their existing workload. A pre-bid meeting was held at Platte Generating Station on October 26, 2007. Bids were received from each of the qualified bidders on December 6, 2007.

Technical. Black & Veatch evaluated the bids on a cost basis. Each bid contained technical clarifications and exceptions. This is typical for a procurement of this complexity due to the differences in the bidders' designs and approaches. Each vendor's exceptions and clarifications were reviewed and found to be reasonable and acceptable.

As shown in Table 7 of the attached evaluation, the scope of supply from the three bidders largely agrees with each other, and with the specification. Therefore, it is Black & Veatch's opinion that all of the bids have a common scope basis.

City of Grand Island
CGI Hg Control Engineering Services

B&V Project 145805
January 10, 2008

A summary of significant technical factors follows.

1. Bag Life

All of the bidders met the minimum bag life requirement of 24,000 operating hours (essentially three years). CB offered an extended bag life option that they claimed would result in significant O&M cost savings for the City of Grand Island over the life cycle of the fabric filter.

This option consists of using 12 modules instead of 10, along with slightly shorter bags, for an additional cost of \$535K. Theoretically, the increased volume of the 12 modules will result in a lower pressure drop across the FF and less abrasion of the bags. The resultant savings in bag/cage replacement were estimated at \$700K to \$1M over the life of the FF. Resultant savings in aux power consumption were estimated at \$280K over the life of the FF.

CB assumes that this option will result in a significantly lower pressure through their baghouse than the other bidders. Since the lower pressure will result in a lower flue gas velocity, the bag material abrasion will be reduced, allowing CB to offer a 54 month guarantee vs. the three-year guarantee.

In analyzing this claim, it is noted that the difference in pressure drop between CB and SPE is 0.7 inwg vs. the 1.2 inwg assumed (nearly half the value). Re-calculating based on the 0.7 inwg differential results in saving of approximately \$500K which is actually less than the cost of the 12 module option (\$535K).

Also, bag abrasion is generally expected to be light because the FF will be installed downstream of the existing ESP resulting in a low inlet particle loading. The bag life for all three bidders should therefore be significantly longer than for a typical fabric filter.

Finally, SPE has agreed to extend its bag life to four years at no additional cost, nearly matching CB's bag life guarantee of 54 months.

Therefore, it is BV's opinion that bag life considerations do not result in an advantage for CB.

2. ID Booster Fan Sizing

The specification does not impose a pre-determined power rating for the ID booster fan, but requires the bidders to guarantee their system performance as a whole based on their design. SPE and CB both bid 2000 HP fans, and HRC bid an 1800 HP fan.

Only SPE submitted enough data to confirm the fan sizing. They sized the fan using a different approach than BV had used in preliminary sizing resulting in a smaller fan than BV had projected; however, their method is a standard approach within the industry and their calculated fan size is appropriate based on their performance guarantees. Therefore, their selection is acceptable and meets specification requirements.

3. Powdered Activated Carbon (PAC) Consumption

The specification requires bidders to guarantee the consumption rate of their halogenated PAC that would be injected into the system. All three bidders met the specification at 3 lb/MACFM. Consequently, PAC consumption rates were not an evaluation factor.

4. Hg Removal Rate

The specification requires the bidders to remove a minimum of 90% of the mercury from the incoming flue gas. All three bidders had equivalent reduction rates that met the specs.

SPE has noted in their proposal that they require a simultaneous comparison of the inlet to outlet Hg levels to prove they have met the 90% Hg removal rate. The City of Grand Island will be responsible for the costs of the testing. SPE has indicated they will be cooperative in mutually selecting the testing method used as the costs for various methods varies greatly.

5. Auxiliary Power Consumption

Each of the bidders indicated a power consumption of approximately 1500 kW. As a result, power consumption is not a differentiating factor in the bid evaluation.

6. Compressed Air Requirements

The specification requires the bidders to provide two sets of air compressors and dryers or blowers for bag cleaning and for supplied equipment requirements. SPE and CB both submitted compressors and dryers, and HRC provided blowers for their proprietary low pressure, high volume cleaning system.

The air compressors furnished under this specification were intended to be used for the ash handling system (separate specification) and other instrument air needs in the area. Since HRC has proposed low pressure blowers in lieu of air compressors, compressed air would have to be provided by CGI for these needs.

7. Incoming SO₃ Limitation

Each bidder's guarantee is based on a maximum SO₃ concentration in the flue gas entering the fabric filter (due to the interference of SO₃ in mercury capture). The actual concentration at Platte Station is being measured and will be compared to the bidder's requirements. SPE Amerex quoted 3 ppm SO₃ maximum, and HRC and CB quoted 5 ppm maximum. Once testing results are completed by CGI, the successful bidder will need to confirm their Hg removal rate and/or PAC consumption guarantees.

8. Fabric Filter Effective Size Criteria

The specification requires that the fabric filter effective size, referred to as Air to Cloth ratio, be a maximum of 4.5 fpm with all compartments on line (gross) and a maximum of 6.0 fpm with one compartment off line (net). All three bidders met the specified requirement.

9. Bag Cleaning Design Considerations

SPE and CB used a traditional bag cleaning design which sends high pressure/low flow pulses to rows of bags, and uses multiple pulse valves and piping to convey and trigger the air releases. The HRC design conversely uses low pressure/high flow pulses with a slowly rotating wheel that directs cleaning air from a central accumulator tank into a rotating manifold.

City of Grand Island
CGI Hg Control Engineering Services

B&V Project 145805
January 10, 2008

The HRC design uses four large heavy duty pulse valves for this fabric filter. The other two bidders will have as many as 168 valves. HRC states that the greatly reduced number of valves will result in significantly less maintenance. BV generally agrees with this statement, but it is not able to quantify the savings.

Both designs compete in the marketplace and are generally deemed acceptable with reasonable maintenance needs.

10. Construction Evaluation Costs

SPE and CB bid fabric filters that are modular in design (pre-built at facility), while HRC bid a standard component design (stick built on-site). The advantages of pre-built modular units are a lower labor rate than field-construction, higher fabrication quality and a shorter outage schedule. The City of Grand Island will experience significant construction savings with a modular design over a component design. The extent of the savings depends on the extent of pre-building at the factory. It is noted that SPE's module will require less field installation effort than CB's module.

SPE's bid also provides and installs insulation and lagging materials for the ductwork which is a significant cost. There will be only a minimal number of joints that will need to have insulation applied in the field. Neither CB nor HRC included insulation or lagging. BV captured the cost differential for this work in the construction differential cost (See Table 3).

SPE also provides framing and panels for the top weather enclosures and bottom hopper, whereas the other two bidders included only framing.

BV performed an evaluation of the field erection costs for each of the three bidders. A differential field erection cost was applied in the construction evaluation factors (See Table 3).

Conclusion. Black & Veatch recommends that the City of Grand Island award the PGS Mercury Control Equipment project to SPE America for \$6,262,839, which includes sales tax, as the lowest and best bid for the City of Grand Island.

Very truly yours,

BLACK & VEATCH

Curt Brown
Project Manager

ER/jo
Attachment[s]

cc: Emily Wise
Lynn Mayhew
Roosevelt Huggins
Erv Reed

Project
Specification Name
Specification Number
Date
Revision No.
Budget =

CGI PGS Hg Removal
Mercury Control System
62.0201
9-Jan-08
0
\$9,700,000

Prepared By
Planned Award Date

Ervin Reed
Technical
Emily Ray
Commercial
22-Jan-08

Bid Analysis

Note: Items in Blue will be Updated Automatically from Other Tables

INTRODUCTION/SCOPE OF WORK- To provide the Mercury Control System for the Platte Generating Station for the City of Grand Island.

TABLE 1: BID ANALYSIS SUMMARY

	SPE	CBEEC	HRC	Comments
a. BASE BID PRICE (From Table 2)	\$6,135,379	\$7,594,115	\$7,734,200	
COST ADJUSTMENTS				
b. Technical Cost Adjustment (From Table 3)	\$0	\$0	\$0	
c. Commercial Cost Adjustment (From Table 4)	\$127,460	\$75,863	\$131,200	
EXPECTED/FINAL CONTRACT PRICE (a+b+c)	\$6,262,839	\$7,669,978	\$7,865,400	
Expected/Final Contract Price vs. Budget (Positive Number Indicates Over Budget)	(\$3,437,161)	(\$2,030,022)	(\$1,834,600)	
Percentage Expected/Final Contract Price vs. Budget	-35%	-21%	-19%	
Expected/Final Contract Price Cost Difference (Expected/Final Price/Low Expected/Final Price)	BASE	\$1,407,138	\$1,602,561	
Percentage Difference vs. Expected/Final Contract Base (Expected/Final Price/Low Expected/Final Price)	BASE	122%	126%	
EVALUATING FACTORS				
d. Technical Evaluation (From Table 3)	\$0	\$0	\$0	
e. Construction Evaluation (From Table 3)	\$0	\$3,408,000	\$2,883,000	
f. Quality Assurance Evaluation (From Table 3)	\$0	\$0	\$0	
g. Commercial Evaluation (From Table 4)	\$0	\$0	\$0	
EVALUATED FACTORS SUBTOTAL (d+e+f+g)	\$0	\$3,408,000	\$2,883,000	
TOTAL EVALUATED COST(a+b+c+d+e+f+g)	\$6,262,839	\$11,077,978	\$10,748,400	
Evaluated Cost Difference (Evaluated Cost - Low Evaluated Cost)	BASE	\$4,815,138	\$4,485,561	
Percentage Difference vs. Evaluated Base (Evaluated Cost/Low Evaluated Cost)	BASE	177%	172%	

Conclusions/Recommendation:

Budget: \$ 9,700,000.00
Awarded Cost: \$ 6,262,839.47
Forecast Adjustments: \$ -
Final Cost at Completion: \$ 6,262,839.47
(Over)/Under Budget: \$ 3,437,160.53

Final Bid Analysis Approvals:

Procurement
Engineering
Project Mgmt.

Emily Ray - Project Procurement Lead
Ervin Reed - Responsible Engineer
Curt Brown- Project Manager

Project
Specification Name
Specification Number
Date
Revision No.
Budget =

CGI PGS Hg Removal
Mercury Control System
62.0201
9-Jan-08
0
\$9,700,000

Prepared By
Ervin Reed
Technical
Emily Ray
Commercial

Bid Analysis

TABLE 2: PRICE BREAKDOWN					
Bidders:	SPE	CBEEC	HRC		Comments
Base Bid Price					
Material and Labor	\$ 5,693,121.00	\$ 7,158,911.00	\$ 7,234,124.00		
Sales Tax	\$ 262,256.00	\$ 435,205.00	\$ 505,976.00		
Total Base Bid	\$6,135,379	\$7,594,115	\$7,734,200		
Price Breakdown:					
Pipes, Valves and Fittings					
Structural Steel	\$ 3,293,379.42	\$ 2,789,345.00	\$ 3,310,100.00		
Pipes and Valves	\$ 201,301.00	\$ 577,384.00	\$ 135,500.00		
Electrical Equipment	\$ 14,716.00	\$ 120,898.00	\$ 22,000.00		
Instrumentation and Controls	\$ 42,538.00	\$ 98,862.00	Included		
Engineering Services	\$ 168,009.00	\$ 105,407.00	\$ 149,700.00		
Model Study/CFD and Physical Flow	\$ 340,256.00	\$ 826,099.00	\$ 893,200.00		
Power Activated Carbon Injection System	\$ 63,063.00	\$ 72,095.00	\$ 34,300.00		
PAC System	\$ 275,036.00	\$ 549,114.00	\$ 638,900.00		
Electrical Equipment	\$ 20,000.00	Included	Included		
Instrumentation and Controls	\$ 14,465.00	Included	Included		
Engineering Services	\$ 25,050.00	Included	Included		
Included Draft Booster Fan					
Included Draft Booster Fan	\$ 486,649.00	\$ 572,641.00	\$ 1,139,100.00		
Structural Steel	\$ 22,950.00	Included	Included		
Isolation Dampers with Drives and Linkages	\$ 170,369.00	Included	Included		
Electrical Equipment	Included	Included	Included		
Instrumentation and Controls	\$ 145,750.00	Included	Included		
Engineering Services	\$ 18,511.00	Included	Included		
Scare ID Fan Motor	\$ 8,481.00	Included	Included		
Inlet and Outlet Ductwork	\$ 145,750.00	\$ 174,921.00	\$ 153,000.00		Includes base and spare motor
Inlet and Outlet Ductwork	Included	\$ 809,247.00	\$ 548,920.00		
Structural Steel	Included	\$ 306,731.00	\$ 144,900.00		
Supplemental Pricing					
Storage and Commissioning Spare Parts	\$ 2,205.00	Included	\$ 55,000.00		
Special Tools	Included	\$ 1,200.00	Included		
Special Lift Platform	Included				
Technical Field Services (340 Days, 8 Roadtrips)	\$ 124,035.20	\$ 243,587.00	\$ 289,700.00		
Transportation - All Goods, DOP/OP, Jobsite	\$ 322,114.00	Included	\$ 1,183,400.00		
Instruction Manuals (5 proof copies, 1 check copy, 18 final copies)	\$ 2,400.00	Included	\$ 11,000.00		
Training	\$ 17,100.00	Included	\$ 10,800.00		
100% Performance and Payment Bonds or Letter of Credit	\$ 149,643.38	\$ 133,861.00	\$ 17,800.00		
Labor (Engineering and In-house Services)	Included	Included	Included		
Taxes (7.0%)	Included	Included	Included		
Base Bid Price (Should Equal Base Bid Price Above)	\$ 6,135,379.00	\$ 7,158,911.00	\$ 7,734,200.00		
Options Pricing (Not Included in Evaluated Price)					
Q System Blower	\$ 5,500.00	N/A	N/A		
Q System Feeder	\$ 12,000.00	N/A	N/A		
Filter Timer Boards	\$ 1,100.00	N/A	N/A		
Miscellaneous Gaskets, Filters	\$ 2,500.00	N/A	N/A		
MFDEnclosure for ID Fan	N/A	\$ 505,000.00	N/A		
MCCs for baghouses and PAC equipment	N/A	\$ 192,000.00	N/A		
Equipment	N/A	\$ 145,000.00	N/A		
Elevator	N/A	\$ 180,000.00	N/A		
Supplier Alternatives (Not Included in Evaluated Price)					
Eliminate shop insulation from the inlet and outlet ductwork and ship as flat panels					
Customer would have to weld the duct flat panels and insulating the duct sections at grade vs. the cost of the shop insulation and more expensive height	\$ (426,925.00)	N/A	N/A		
Eliminate lower enclosure for fabric filter (upper enclosure remains)	\$ (68,973.00)	N/A	N/A		
Eliminate 304SS Hopper Liners	\$ (31,419.00)	N/A	N/A		
12 Module PUFF	N/A	\$ 535,000.00	N/A		

Project CGI PGS Hg Removal
Specification Name Mercury Control System
Specification Number 62.0201
Date 9-Jan-08
Revision No. 0
Budget = \$9,700,000

Bid Analysis

TABLE 3: TECHNICAL EVALUATION

Description	SPE	CBEEC	HRC	Comments
Technical Cost Adjustments to Base Bid				
1. None				
Subtotal Technical Cost Adjustments (Subtotals Forwarded to Table 1)	\$0	\$0	\$0	
Technical Evaluation Factors (If Applicable)				
1. Differential Balance of Plant Costs:				
Booster Fan Spring Differential Cost	\$0 *	\$0 *	\$0 *	*Upon Engineering analysis, cost differential is negligible.
2. Differential Operating & Maintenance Costs (If O&M is Evaluation Factor):				
Halogenated PAC Consumption Differential Cost	\$0 *	\$0 *	\$0 *	*Upon Engineering analysis, cost differential is negligible.
Hg Removal Rate Differential Cost	\$0 *	\$0 *	\$0 *	*Upon Engineering analysis, cost differential is negligible.
3. Other Technical Evaluation Factors:				
Clyde Bergmann Extended Bag Life Option Savings	N/A	\$0 *	N/A	*CBEEC offered a 12 module baghouse for an additional \$535K that they claimed would save the City of Grand Island between \$700K and \$1M in maintenance costs over the life cycle of the bag house due to an extended bag life guarantee. Upon engineering analysis, considering the specific application at CGI, BV does not agree their assumptions and it is our opinion that the actual bag life will be comparable for the three bidders.
Subtotal Technical Evaluation Factors (Subtotals Forwarded to Table 1)	\$0	\$0	\$0	
Construction Evaluation Factors (If Applicable)				
1. Differential Construction Costs from Base Bidder for constructing Modular Fabric Filter, insulation supply, installation and engineering:	BASE	\$3,408,000	\$2,883,000	
Subtotal Constructability Factors (Subtotals Forwarded to Table 1)	\$0	\$3,408,000	\$2,883,000	
Quality Assurance Evaluation Factors (If Applicable)				
1. None				
Subtotal Quality Factors (Subtotals Forwarded to Table 1)	\$0	\$0	\$0	

Project CGI PGS Hg Removal
Specification Name Mercury Control System
Specification Number 62.0201
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Revision No. 0
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Bid Analysis

TABLE 4: COMMERCIAL EVALUATION

Description	SPE	CBEEC	HRC	COMMENTS
Commercial Cost Adjustments to Base Bid				
1. Subtract included sales tax	-\$282,258	-\$435,205	-\$505,976	
2. Add sales tax at 7.0%	\$409,718	\$501,124	\$505,976	
3. Training		\$9,944 *	\$11,200 *	*CBEEC adjusted to add 11 days of training HRC was adjusted to add 7 days of training
4. Field Service			\$120,000 *	* HRC adjusted to add 75 days of field service time.
Subtotal Commercial Cost Adjustments (Subtotal Forwarded to Table 1)	\$127,460.47	\$75,882.70	\$131,200.00	
Commercial Evaluation Factors				
1. Currency Risk	N/A	N/A	N/A	
2. Projected Shop Inspection & Expediting Cost	N/A	N/A	N/A	
3. Projected Escalation Cost	N/A	N/A	N/A	
4. Cost of Money for Supplier Payment Terms (From Table 8)	N/A	N/A	N/A	
5. Tax and Duty Cost (If Not Included in Bidder's Base Price)	N/A	N/A	N/A	
Subtotal Commercial Evaluation Factors (Subtotal Forwarded to Table 1)	\$0	\$0	\$0	
Training				
Number of Days/Trips Included in Bidder's Quotation	16/2	5/2	9/2	
Unit Adjusting Prices:		Not Provided		
Per Diem Rate (Monday through Friday up to 10 hours)	\$155.00 / day	\$0.00 / day	\$1,600.00 / day	
Per Diem Rate (Saturday up to 10 hours)	\$232.50 / day	\$0.00 / day	\$1,600.00 / day	
Per Diem Rate (Sunday / Holiday up to 10 hours)	\$232.50 / day	\$0.00 / day	\$3,300.00 / day	
Adjustment Rate (Monday through Friday up to 10 hours)	\$232.50 / hr	\$0.00 / hr	\$120.00 / hr	
Adjustment Rate (Saturday up to 10 hours)	\$232.50 / hr	\$0.00 / hr	\$120.00 / hr	
Adjustment Rate (Sunday / Holiday up to 10 hours)	\$232.50 / hr	\$0.00 / hr	\$240.00 / hr	
Round Trip Rate	\$1,000.00 / trip	\$0.00 / trip	\$1,200 / trip	
Technical Field Service Rates				
Number of Days/Trips Included in Bidder's Quotation	240/8	240/8	165/8	
Unit Adjusting Prices:		Not Provided		
Per Diem Rate (Monday through Friday up to 10 hours)	\$155.00 / day	\$0.00 / day	\$1,600.00 / day	
Per Diem Rate (Saturday up to 10 hours)	\$232.50 / day	\$0.00 / day	\$1,600.00 / day	
Per Diem Rate (Sunday / Holiday up to 10 hours)	\$310.00 / day	\$0.00 / day	\$3,300.00 / day	
Adjustment Rate (Monday through Friday up to 10 hours)	\$232.50 / hr	\$0.00 / hr	\$120.00 / hr	
Adjustment Rate (Saturday up to 10 hours)	\$232.50 / hr	\$0.00 / hr	\$120.00 / hr	
Adjustment Rate (Sunday / Holiday up to 10 hours)	\$310.00 / hr	\$0.00 / hr	\$240.00 / hr	
Round Trip Rate	\$1,000.00 / trip	\$0.00 / trip	\$1,200.00 / trip	

Project
 Specification Name
 Specification Number
 Date
 Revision No.
 Budget =

CGI PGS Hg Removal
 Mercury Control System
 62.0201
 9-Jan-08
 0
 \$9,700,000

Bid Analysis

TABLE 5: COMMERCIAL INFORMATION

Supplier (Full Name)	SPE	GBEEC	HRC		
Supplier's Main Contact Person	SPE: Amerex John Foster	Clyde Bergemann EEC Don Hug	Hamon Research Cottrell Barry Stoltzman		
Phone	724-935-1300 x-131E	410-368-7171	908-333-2020		
Fax	724-935-1342	410-368-8721	908-333-2154		
E-mail	johnfoster@spe-amex.com	clhug@ebec.com	barry.stoltzman@hamonusa.com		
Location (City, State, Country)	Wexford, PA, USA	Hanover, MD, USA	Somerville, NJ, USA		
Bidder's Quotation Number	SP-070601-R1	07-11-20178	P-B707		
Bidder's Quotation Date	6-Dec-07	6-Dec-07	6-Dec-07		
Date(s) of Other Correspondence From Bidder	N/A	N/A	N/A		
Bidder Acknowledges All RFQ Addenda	Yes	Yes	Yes		
Bidder's Proposal Validity	60 days	90 days	60 days		
Taxes/Duties					
Taxes/Duties Included in Base Bid (Yes/No/NA)	Yes	Yes	Yes		
(If No, refer to Table 4)	6-Feb-08	Yes	Yes		
Firm Base Pricing (Yes/No) (If No, refer to Table 4 - Escalation)	Yes	Not Provided	Yes		
Firm Unit Adjustment Pricing Through Warranty Period (Yes/No)	Yes	N/A	N/A		
Option Pricing Validity	31-Dec-09	No	No		
Commercial/Technical Compliance (Yes/No)	Yes	Yes	Yes		
If No, All Exceptions Defined in Bid (Yes/No)	DDP/CIP Jobsite	DDP/CIP Jobsite	DDP/CIP Jobsite		
Transportation/Logistics	No	Yes, bags and electrical	No		
Special Storage Requirements (Yes/No)		Yes			
If Yes, Requirements Described in Bid (Yes/No)					
Place(s) of Manufacture	USA	USA	USA		
Country of Origin	No	No	Not Provided		
Bidder's Own Facility					
Facilities of Others	WW (Plate), PA (Structural), KS (Carbon Injection), AL (ID Fan)	Various	Not Provided		
Ex Works Delivery Location (City, State/Province, Country, and Postal Code)	Parkersburg, WV; Butler, PA; Kansas City, KS; Peiham, AL	Various	Not Provided		
Number of Shipments	20	Various	Not Provided		
Total Number of Pieces Per Shipment	1 to lots of supports	Later	Not Provided		
Total Weight and Volume Per Shipment	40,000lb / 5,900 cu ft	Later	Not Provided		
Total Weight and Volume of Largest Single Component	40,000lb / 5,900 cu ft	42,000lb	Not Provided		
Harmonize Tariff Code (International Shipment)	N/A	N/A	N/A		
At Risk Shipment (Yes/No or N/A)	No	No	No		
Subcontracting Proposed (Yes/No)	Yes	Yes	Yes		
If Yes, Subcontractor List Provided in Bid (Yes/No)	Yes	Yes	Yes		
Schedule Information					
Bidder Agrees With Schedule Dates in RFQ Documents (Yes/No)	Yes	Yes	Yes		
Warranty Period					
Warranty Cost Included in Base Bid (Yes/No/NA)					
(If No, refer to Table 4)	Yes	Yes	Yes		

Project
 Specification Name
 Specification Number
 Date
 Revision No.
 Budget =

CGI PGS Hg Removal
 Mercury Control System
 62.0201
 9-Jan-08
 0
 \$9,700,000

Bid Analysis

TABLE 6: UNIT PRICE COMPARISON										
No. Item	Estimated Quantity	Unit	SPE		CBEEC		HRC			
			Unit Price	Subtotal	Unit Price	Subtotal	Unit Price	Subtotal		
1. Fabricated Plate	1	lb	2.22	2.22	Not Provided	Not Provided	Not Provided	Not Provided		
2. Structural Supports Heavy	1	lb	2.02	2.02	Not Provided	Not Provided	Not Provided	Not Provided		
3. Structural Supports Light	1	lb	2.63	2.63	Not Provided	Not Provided	Not Provided	Not Provided		
4. Hand Rail TP, Grating, Ladders	1	lb	4.14	4.14	Not Provided	Not Provided	Not Provided	Not Provided		
5. Bags, PPS 18oz Scrim Support	1	ea	77.80	77.80	Not Provided	Not Provided	Not Provided	Not Provided		
6. Cages 12 Wire, two piece	1	ea	28.57	28.57	Not Provided	Not Provided	Not Provided	Not Provided		
7. 3" Turbo 75 valve kits	1	ea	105.00	105.00	Not Provided	Not Provided	Not Provided	Not Provided		

Project
Specification Name
Specification Number
Date
Revision No.
Budget =

CGI PGs Hg Removal
 Mercury Control System
 82.0201
 9-Jan-08
 0
 \$9,700,000

Bid Analysis

TABLE 7: TECHNICAL COMPARISON

Specification Requirements		SPE	CBEEC	HRC
Fabric Filter				
Type	Pulse Jet	Pulse Jet	Pulse Jet	Pulse Jet
Number of compartments	Supplier's design	8	12	4
Bag length, ft max	26.5	26.25	25	26.5
Bag diameter, in	Supplier's design	5.125 nom, round	6 nom, round	6 x 2.5 nom oblong (4.9 in equiv)
Number of bags incl spares	Supplier's design	3352	4536	3296
Gross A/C, fpm max	4.5	4.23	3.41	4.5
Net A/C, fpm max	6.0	4.84	3.73	6.0
Can velocity, ft/min	Supplier's design	476	356	
Pressure drop through fabric filter inw/c	Supplier's design	6.5	8.0	
Auxiliary power, kw	Supplier's design	1556	~1500	1500
Design arrangement	Supplier's design	Modular	Modular	Field erected
Hg minimum removal guarantee	90%	90%	90.0%	90%
SO ₂ contingency against Hg guarantee		Max 3 ppmv	Max 5 ppmv	Max 5ppmv
Consumption of halogenated PAC, max lb/MACF	Supplier's design	3	3	3
Components				
Plate min thickness	1/4 in	1/4 in	1/4 in	6mm
Bag material	PPS	PPS	PPS	PPS
Bag weight, oz/yd ²	15	18	18	18
Scrim weight, oz/yd	3	Scrim	Scrim	Scrim
Bag % spares	5%	5%	5%	5%
Bag cleaning system	Supplier's design	HP comp air	HP comp air	LP high flow
Pulsing method	Supplier's design	Rows of stationary pulse pipes	Rows of stationary pulse pipes	Rotating cleaning manifold
Cage construction	Carbon Steel	CS, 2 piece	CS, 2 piece, 12-9 ga wire, rings on 8 centers	CS, 2 piece, 10-9 ga wire, rings on 7 centers
Cage coating	None	None	None	None
Cage % spares	5%	5%	5%	5%
Air source - Two 100% trains w/dryer & storage receiver	Compressors or blowers	Compressors	Compressors	Blowers, no dryers
Tubesheet min thickness	1/4 in	1/4 in	3/8 in	6mm
Access				
Main access	Stairs	Stairs	Stairs	Stairs
Alternate access	Caged ladder	Caged ladder	Caged ladder	Caged ladder
Walkways	Ends between modules, access levels	Included	Included	Included
Type of roof enclosure	Supplier's design	Penthouse w/lift off doors	Walk-in plenum	Walk-in plenum
Roof jib hoist and crane	Required	Included	Included	Included
Roof enclosure components	Top, walls, framing, insul, ventilation, fans	Top, walls, framing, insul, ventilation, fans	Framing only, no insulation or ventilation fans	Framing only, no insulation or ventilation fans
Hopper valley angle min, degrees	60	60	60	
Internal cladding	Lower 1/3 SS	Lower 1/3 SS	Lower 1/3 SS	
Hopper plate thickness	1/4 in	1/4 in	1/4 in	6mm
Clearance below hopper outlet flange	6"	6"	6"	6"
Hopper accessories	Strikeplate, pocketube, door, vibrator, etc	Included	Included	Included
Hopper insulation	Insulated	Insulated	No insulation	No insulation
Hopper level detection	Supplier's design	Included	Included	Included
Hopper heating	Supplier's design	Included	Included	Included
Hopper enclosure components	Framing, sides, insulation, ventilation, fans	Framing, sides, insulation, ventilation, fans	Framing only, no insulation, no ventilation or fans	Framing only, no insulation, no ventilation or fans
Broken bag detector	Each compartment	Included	Included	Included

TABLE 7: TECHNICAL COMPARISON				
Specification Requirements		SPE	CBEEC	HRC
Structural Steel				
Fabric filler structural support steel	Supplier's design	Included	Included	Included
Ductwork structural support steel	Supplier's design	Included	Included	Included
Base sildplates, misc. fasteners	Supplier's design	Included	Included	
Dampers				
Inlet dampers	Supplier's design	8 Elect/mechan, low leakage, butterfly	12 Pneumat, butterfly	4 Pneumat, low leakage, louver
Outlet dampers	Supplier's design	8 Pneumat, poppet	12 Pneumat, poppet	8 Pneumat, poppet
Bypass dampers	Supplier's design	3 Pneumat, dual disc, poppet	3 Pneumat, dual disc, poppet	3 Pneumat, dual disc
PAC Injection System				
PAC injection silo size, storage	Size per supplier, min 7 days plus margin	10' dia x 30' side wall	13' dia x 17' side wall	13' x 35'
Silo access & accessories	Caged ladder, access, manway	Included	Included	Included
Silo dust vent	Filter w/airn, bags, cages, cleaning	Included	Included	Included
Silo level indicators, activators, 2 isolation valves, rotary feeders	Bottom fluidization system	Included	Included	Included
Silo feeders, blowers, knife gates, 2-50% systems	Loading, transfer	Included	Included	Included
PAC transport line to lances, piping, valves	1 -100% line w/out injectors	Included	Included	Included
PAC system control panel	Control instrumentation, panel	Included	Included	Included
Booster Fan				
Booster fan	Supplier's design	DWDI airfoil w/over vane dampers	DWDI airfoil w/radial vane dampers	Airfoil, type A, air 3, variable vane
Booster fan motor size, hp and speed, rpm	Supplier's design	2000, 900	2000, 900	1800, 900
Booster fan bearings	Supplier's design	Water cooled sleeve		
Spare motor	Required	Included	Included	Included
Ductwork				
Scope - ID/fan to FF to booster fan to ductwork				
Plate min thickness	1/4 in	1/4 in	1/4 in	6mm
Ductwork insulation	Insulated	Insulated	No insulation	No insulation
Expansion joints	Non-metallic	Included	Included	Included
Modelling				
AQC Design Engineering	CFD entire AQC system	Included	Included	Included
	All drawings, calculations, arrangements	Included	Included	Included
Controls	Mfr's standard PLC for P/JFF and PAC	Included	Included	Included

Purchasing Division of Legal Department
INTEROFFICE MEMORANDUM



Wes Nespor, Assistant City Attorney

*Working Together for a
Better Tomorrow, Today*

BID OPENING

BID OPENING DATE: December 6, 2007 at 11:00 a.m.

FOR: PGS Mercury Control System

DEPARTMENT: Utilities

ESTIMATE: \$9,700,000.00

FUND/ACCOUNT: 520

PUBLICATION DATE: October 12, 2007

NO. POTENTIAL BIDDERS: 7

SUMMARY

Bidder:	<u>SPE-Amerex</u> Batavia, IL	<u>Hamon Research-Cottrell, Inc.</u> Somerville, NY
Bid Security:	307,000.00	Federal Insurance Company
Exceptions:	None	None

Bid Price:		
Material:	\$4,836,845.00	\$7,228,224.00
Labor:	1,016,276.00	-0-
Sales Tax:	<u>282,258.00</u>	<u>505,976.00</u>
Total Base Bid:	\$6,135,379.00	\$7,734,200.00

Bidder:	<u>Clyde Bergemann US, Inc.</u> Hanover, MD
Bid Security:	\$375,000.00
Exceptions:	None

Bid Price:	
Material:	\$6,289,224.00
Labor:	941,691.00
Sales Tax:	<u>435,205.00</u>
Total Base Bid:	\$7,594,115.00

cc: Gary Mader, Utilities Director
Tim Luchsinger, Assist. Utilities Director
Karen Nagel, Utilities Secretary
Wes Nespor, Assist. City Attorney

Bob Smith, Assist. Utilities Director
Pat Gericke, Utilities Admin. Assist.
Dale Shotkoski, City Attorney
Sherry Peters, Legal Secretary

P1196

RESOLUTION 2008-17

WHEREAS, the City of Grand Island invited sealed bids for Mercury Control System for the Platte Generating Station, according to plans and specifications on file with the Utilities Department; and

WHEREAS, on December 6, 2007, bids were received, opened and reviewed; and

WHEREAS, SPE-Amerex of Batavia, Illinois, submitted a bid in accordance with the terms of the advertisement of bids and plans and specifications and all other statutory requirements contained therein, such bid being in the amount of \$6,262,839.00, including tax; and

WHEREAS, the bid of SPE-Amerex is less than the estimate for the Mercury Control System.

NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND COUNCIL OF THE CITY OF GRAND ISLAND, NEBRASKA, that the bid of SPE-Amerex of Batavia, Illinois in the amount of \$6,262,839.00, including tax for Mercury Control System for the Platte Generating Station is hereby approved as the lowest responsible bid.

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Adopted by the City Council of the City of Grand Island, Nebraska, January 22, 2008.

Margaret Hornady, Mayor

Attest:

RaNae Edwards, City Clerk