

FOR BOARD ACTION

Agenda Item #

6.a.

Meeting Date:

1/30/07

SUBJECT:

Emissions Reduction Project

Approval to Purchase Ash Handling and Storage System

PREPARED BY:

Wally Schlink, Director of Power Resources

ITEM DESCRIPTION:

The Emission Reduction Project (ERP) continues to proceed according to the project schedule. The Board has previously approved the preliminary project plan, the contract for Engineering Services, the purchase of the scrubber / baghouse equipment and the formal authorization and financing program for the project.

Staff is now prepared to request approval for the 2nd large equipment purchase which is the Ash Handling and Storage System. The ash handling system will reduce fugitive particle emissions and will transfer and store the ash and scrubbing material for proper disposal.

Through our engineers, Utility Engineering, a specification was distributed to 4 suppliers and we were disappointed that only one bidder eventually chose to bid on the project. Currently there is a boom in the building of coal fired power plants world wide and the installation of emission reduction equipment domestically that has the suppliers of equipment being very selective in their choice of project participation. In reality, the RPU project is very small on the scale of projects on the drawing board and participation by the bidders reflected that fact.

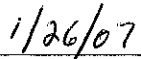
On a more positive note we are pleased that the bidder that did respond, National Conveyor Corporation met all the criteria of the Request for Bid and is a reputable supplier of ash handling systems. Utility Engineering conducted a site visit to a location that had a National Conveyor Corporation system similar to the one bid for RPU and was satisfied that the system will be adequate to meet our demands.

We request that the Board approve the purchase of the ash handling and storage system as defined in the RFB. The proposed contract price is below the project estimate. This is an approved project in the 2007 capital budget.

Attached is a recommendation from Utility Engineering. Staff will be at the Board meeting to answer any questions on this request.



General Manager



Date

FOR BOARD ACTION

Agenda Item # 6.a.

Meeting Date:

1/30/07

UTILITY BOARD ACTION REQUESTED:

Staff recommends that the Board approve the purchase and request that the Mayor execute the contract for the supply of the ash handling and storage system package per the bid specification from National Conveyor Corporation for the amount of \$1,349,717.

General Manager

Date

ROCHESTER PUBLIC UTILITIES



901 Marquette Avenue, Suite 2900, Minneapolis, MN 55402
612.215.1300 • Fax 612.766.0360 • Web: www.ue-corp.com

January 23, 2007

Mr Walter Schlink, P.E.
Director of Power Production
Rochester Public Utilities
4000 East River Road NE
Rochester, MN 55906-2813

Subject: Silver Lake Plant Unit 4 Emissions Reduction Project
UE Project No. 012668
Recommendation to Purchase Ash Handling and Storage System from
National Conveyors Corporation

Dear Mr Schlink:

Utility Engineering Corporation (UE) recommends award of the ash handling and storage bid package to National Conveyors Corporation (NCC). We have worked closely with RPU and have followed RPU bid protocol while conducting the competitive bid process. We received one bid from NCC. UE has studied the NCC bid package in detail and completed discussions related to technical and commercial exceptions with RPU and NCC. We believe the NCC package will provide RPU with an adequate ash handling system for SLP Unit 4 with inclusion of NCC-provided performance guarantees and liquidated damages for delivery dates. Awarding this contract in January 2007 will allow RPU to maintain the project schedule and take another major step toward a successful project.

Bidding Process

On October 26, 2006, a Request for Bid (RFB) for the ash handling and storage equipment was issued to the following four (4) suppliers:

United Conveyor Corporation (UCC)
Allen-Sherman-Hoff (ASH)
National Conveyors Corporation (NCC)
Delta-Ducon

UCC declined to bid due to time constraints and the perceived competitiveness of the other bidders. ASH declined to bid based on their objections to applicable commercial terms and additional performance bond costs due to their parent company's recent emergence from

Chapter 11 Delta-Ducon declined to bid due to time constraints. A pre-bid meeting was conducted on November 3, 2006, and was attended by all four bidders.

NCC Bid

NCC was the only company to submit a bid and submitted a detailed proposal for a price of \$1,349,717, including \$10,000 for the Performance Bond and \$60,000 for a contingency. UE believes the NCC bid is responsive to the specification with no significant exceptions.

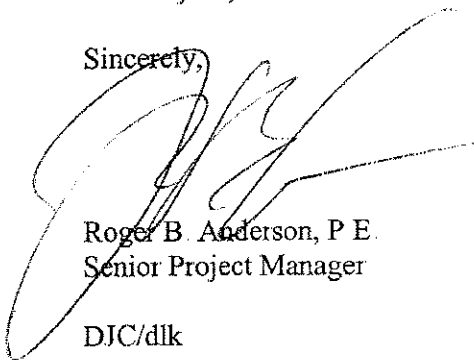
UE's estimated cost for the ash system was \$1,475,000 including a \$50,000 contingency and the Performance Bond costs. The NCC bid amount was \$1,349,717 which compares closely with the UE estimate. (Bid price is 8.5% lower than the estimate.)

UE considers the NCC equipment to be of adequate quality based on a thorough evaluation of this proposal. As the NCC base bid price is favorable in light of current market conditions and since the equipment proposed is of adequate quality, UE recommends that RPU proceed with contract negotiations to purchase the ash handling and storage equipment from NCC.

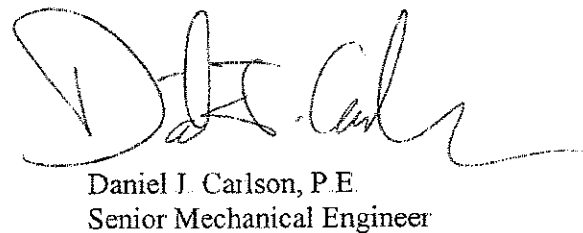
Recommended Contract Price

Including the Performance Bond costs and the contingency amount, UE recommends the issuance of a purchase order to NCC for a lump sum price of \$1,349,717. To ensure that the negotiated Milestone Schedule dates and liquidated damages remain valid, UE recommends that a purchase order agreement for the ash handling and storage equipment be executed by February 16, 2007.

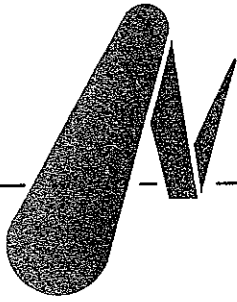
Sincerely,



Roger B. Anderson, P.E.
Senior Project Manager
DJC/dlk



Daniel J. Carlson, P.E.
Senior Mechanical Engineer



**NATIONAL
CONVEYORS COMPANY, INC.**

**33 Nicholson Road
East Granby, Connecticut 06026
www.nationalconveyors.com
Tel. 860/653-0374
Fax 860/653-2965**

PROPOSAL

No. A9162

November 20, 2006

**To: Rochester Public Utilities
Attn: Bob Ledebuhr, C.P.M.
4000 East River Road NE
Rochester, MN 55906-2813
Phone: (507) 280-1674
Fax: 507-280-1643
Email: bledebuhr@rpu.org**

Re: Ash Handling and Storage System

In accordance with specifications and conditions described herein, we propose to furnish, sell and deliver to you the following goods and services. The proposed material will as regularly manufactured by our company and will substantially conform to the arrangement of equipment shown on our drawing D-9162-01, Rev. 0 and the description below in accordance with our understanding of your requirements.

This proposal includes the equipment as listed and described herein for a complete and fully functional National Ash Handling and Storage System. The Equipment and Services Provided section is based upon the arrangement of equipment shown on our drawing listed above.

ON BEHALF OF NATIONAL CONVEYORS CO.

BY PURCHASER

This proposal is accepted in accordance with the terms and conditions specified herein, unless specifically modified.


Arnold Serenkin - President
serenkin@nationalconveyors.com

By _____

Title: _____

Company: _____

Date: _____

In quadruplicate & CD

cc: Tusco-John Gilbertson

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1.0 DESIGN CRITERIA

1.1 CAPACITY

The proposed vacuum pneumatic ash collection system, when operated and maintained in accordance with our instructions and when continuously and evenly fed with material, is designed to convey 15 tons per hour of dry, free-flowing, non-hygroscopic, non-burning PJFF fly ash with a bulk density of 45 lbs. per cu. ft. through an 8" dia. transport line.

1.2 FLY ASH VACUUM EXHAUSTER DESIGN DATA

Inlet Volume	2700 ICFM (1541 SCFM)
Relative Humidity	60%
Ambient Temp.	68° F
Ambient Pressure	14.18 PSIA (985 ft. elevation)
Inlet Vacuum	10" HG (68% of maximum differential)
Inlet Temp.	100° F
Roots Blower	832 VJ
Water Injection	8.0 GPM
Approximate Speed	1216 RPM (68% of maximum)
Brake Horsepower	93.8 +/- 5%
Motor Horsepower	125 @ 1800 RPM
Estimated B10 Bearing Life	322,000 hours
Estimated Free Field Sound Pressure	84.9 dB(A) ±4 dB(A) @ 1 meter

1.3 SILO AERATION AIR BLOWER DESIGN DATA

Inlet Volume	1230 ACFM (1123 SCFM)
Relative Humidity	60%
Ambient Temp.	68° F
Ambient Pressure	14.18 PSIA (985 ft. elevation)
Outlet Pressure	4.5 PSIG (83% of maximum differential)
Outlet Temp.	162° F (at 4.5 psig)
Roots Blower	718 URAI
Approximate Speed	1200 RPM (59% of maximum)
Brake Horsepower	31.9 +/- 5%
Motor Horsepower	40 @ 1800 RPM
Estimated B10 Bearing Life	263,000 hours
Estimated Free Field Sound Pressure	84.4 dB(A) ±4 dB(A) @ 1 meter

2.0 DESCRIPTION OF ASH SYSTEM OPERATION

In the operation of the system, fly ash is conveyed by vacuum to a storage silo. The ash first enters a silo mounted centrifugal receiver unit, for primary separation of ash from the air stream. From the primary receiver, the air stream passes through a pulse jet bag filter for final removal of particulates. A motor driven mechanical exhauster creates the induced vacuum, and discharges to the atmosphere.

The system collects ash continuously and cyclically discharges to the storage silo. At the end of each timed cycle, the upper gates beneath the receiver and bag filter open to discharge the collected material into intermediate airlock hoppers. The upper gates then close, the airlock hoppers pressure is equalized, and the bottom gates open to discharge the material into the storage silo. After completion of the discharge cycle the bottom gates close.

When handling ash, the system logic will be designed to automatically switch from one ash pick-up point to the next by a vacuum detection control system which indicates the conveyor line is clear and that the hopper being serviced has stopped discharging ash.

The control system will be designed to provide full load regulation of the automatic ash collection system as described below:

With an ash intake valve (type "D" disc valve) and branch line gate (rotary swing gate) open, the material feeds into the conveyor line. As the loading in the line increases, the vacuum in the system rises. If the vacuum exceeds the design point, a full load vacuum switch actuates to close the ash intake valve to stop the feed of material into the conveyor line. As the line clears itself and the vacuum decreases, the ash intake valve opens to resume the feed of material.

Conveying continues in this manner, under full load regulation, until the hopper being serviced has stopped discharging ash. When this occurs, the vacuum in the system drops to a "no load" reading actuating the "line clear" vacuum switch. This energizes a changeover timer and if it remains energized for 15 seconds, the system indexes one position, which closes the ash intake valve being serviced and opens the next ash intake valve in sequence. The 15 second delay prevents premature sequencing in the event of momentary low vacuum caused by an interruption in the feed of material.

The conveying cycle continues until all ash hoppers are serviced at which time the system returns to the sequence ready position and automatically shuts down. After a preset delay, the ash collection cycle will automatically restart.

3.0 GENERAL NOTES

To substantially reduce field installation and handling costs, all system components are factory assembled to the fullest extent possible. Refer to the Equipment and Services Provided section for the number of pieces and method of assembly.

There are many differences between ash handling systems and manufacturer's offerings, and while users want to have the most economical system, it should be apparent that the initial quality, materials of construction and design contribute to the overall cost of a system during its lifetime. Therefore, we wish to point out some significant features of National Conveyors Company's Ash Handling System and components. National Conveyors Company has since 1933 been a leading manufacturer of industrial plant ash handling system and this experience, along with our reliable heavy-duty equipment, is incorporated in all our systems and components.

Ash is an extremely abrasive material and for this reason all of our pneumatic conveying system elbows, wearbacks, material intake tees, primary receivers, wear plates, and other high wear items are cast of Ni-Hard metal. Ni-Hard has a guaranteed and certified minimum hardness of 550 Brinell throughout, as compared to "hard iron" or "white iron" manufactured in a non-controlled process. National's standard conveyor piping is a centrifugally cast chrome-iron alloy pipe with a Brinell hardness of 280 on the ID and up to 400 on the OD. Other piping with a nominal hardness of 500 BHN is available.

In addition, all wearbacks are reversible and interchangeable within a given pipe size to minimize spare part requirements. Periodic reversing of the wearbacks normally results in doubling their lives.

All National system intake tees are of the preferred offset design to prevent line blockages by allowing a continuous flow of conveying air, even when the tee is under a full head of material.

4.0 NOTABLE CONSTRUCTION FEATURES

Some notable features of our equipment include:

A - Ni-Hard* abrasion resistant cast fittings with a minimum certified Brinell hardness of 550.

B - Fittings with reversible and interchangeable Ni-Hard* wearbacks.

C - Offset, self-feeding, non-clogging type intake tees of Ni-Hard* metal.

D - Centrifugal receiver section constructed of Ni-Hard* metal.

E - Centrifugally cast chrome iron alloy extra heavy wall pipe, 280-400 Brinell.

F - Heavy duty double acting air cylinder operators with speed controls and manual override buttons for all air operated devices.

G - Rotary swing cast iron branch line isolation gates with spring loaded seal rings.

H - Spring loaded adjustable air inlet check valves.

J - Ni-Hard* abrasion resistant discharge chutes beneath receiving equipment, minimum Brinell of 550.

* Ni-Hard is a nickel-chromium cast iron with a minimum Brinell hardness of 550 (ASTM A532 1-A), which was developed by the International Nickel Company expressly to resist wear from high abrasive materials.

With a view towards long life with minimum maintenance, National designs systems and selects components on a conservative basis. Ash generation flow and/or flow bulk density with values exceeding the design range occasionally will be encountered. The conservative National approach ensures that these conditions can be accommodated.

5.0 DRAWINGS & INFORMATION

The following drawings and descriptive literature are enclosed to aid in your evaluation of our offering:

Dwg. D-9162-01, Rev. 0	Proposed Ash Handling System
Dwg. A1097A	Pipe Supports & Hangers
Dwg. A1111-12	12" dia. Disc Valve
Dwg. A1141B	Type F8 Centrifugal Receiver
Dwg. A1175A	8" Air Intake Valve with Connector
Dwg. A1289PE-1	Rotary Swing Gate-Air Operated
Dwg. A1385B	Centrifugally Cast Pipe and Couplings
Dwg. A1438-4	P.E. Fittings for Sleeve Type Couplings
Dwg. A1501-M3C	Vacuum Breaker
Dwg. A1728-P1	Pulse Jet Filter
Dwg. A1775	Aeration Pads
Dwg. A1780-1	Silo Vent Filter
Dwg. A1784A	Mechanical Exhauster Unit
Dwg. A1784-P1A	Pressure Blower Assembly
Dwg. A1785A	Guard Filter Assembly
Dwg. A1792-A	18" Dual Dump Gate Assembly
Dwg. A1792-B	10" Dual Dump Gate Assembly
Dwg. A1793	Slide Gate Assembly
Dwg. A1804	Paddle Mixer Assembly

6.0 EQUIPMENT & SERVICES TO BE PROVIDED

6.1A 8" Pneumatic Conveyor Pipelines Servicing (8) PJFF Hoppers

- 470' - Approximate overall length of 8" dia. conveying pipe and fittings, including centrifugally cast chrome-iron alloy conveyor pipe, Brinell 285-340 with a wall thickness of 0.55", in lengths to suit not exceeding 18'-0". Pipe will be cast with plain ends. All fittings are cast of Ni-Hard* metal with a Brinell hardness of not less than 550, and will be provided with renewable, reversible and interchangeable wearbacks, Dwg. A1385B.
- 2 - Spring actuated air intake valves with connector and coupling, Dwg. A1175A.
- 10- 90° split elbow with handhole and plug, Dwg. A1438-4.
- 1- 45° split elbow, Dwg. A1438-4.
- 1- 45° split lateral, Dwg. A1438-4.
- 2- Split junction tee, Dwg. A1438-4.
- 1- Expansion joint for pipe riser to silo, Dwg. A1438-4
- 3- Rotary swing gate (line isolation gate), air cylinder operated, Dwg. A1289PE-1.
- 8 - Type "D" fully enclosed disc valves, air cylinder operated, solenoid actuated, 12" dia. inlet complete with 8" dia. offset self-feeding intake tee and hammer type maintenance cut-off gate, Dwg. A1111-12.
- 1 - Air bleed valve, air cylinder operated, solenoid actuated.
- 3- Riser support assembly, Dwg. A1097A.
- 1- Lot, pipe stanchions, pipe hangers, roller supports, etc.
- 1 - Lot, necessary sleeve type couplings, hardware and gaskets for installation of above.

6.1B 8" Pneumatic Conveyor Pipelines Servicing Each Additional PJFF Hopper

- 10' - Approximate overall length of 8" dia. conveying pipe and fittings, including centrifugally cast chrome-iron alloy conveyor pipe, Brinell 285-340 with a wall thickness of 0.55", in lengths to suit not exceeding 18'-0". Pipe will be cast with plain ends. All fittings are cast of Ni-Hard* metal with a Brinell hardness of not less than 550, and will be provided with renewable, reversible and interchangeable wearbacks, Dwg. A1385B.
- 1 - Type "D" fully enclosed disc valves, air cylinder operated, solenoid actuated, 12" dia. inlet complete with 8" dia. offset self-feeding intake tee and hammer type maintenance cut-off gate, Dwg. A1111-12.
- 2- Pipe hangers.
- 1 - Lot, necessary sleeve type couplings, hardware and gaskets for installation of above.

6.2 National Primary Centrifugal Receiver

- 1 - 4'-0" dia. heavy duty centrifugal primary receiver constructed of 3/4" thick "Ni-Hard"* abrasion resistant metal quadrant sections with exterior flanges, Dwg. A1141B.
- 1- Dual dump gate assembly for centrifugal primary receiver, 18" diameter, air operated and solenoid actuated with limit switch, Dwg. A1792-A.

6.3 Pulse Jet Bag Filter

- 1 - Automatic bag filter with top bag removal, 99.9% efficiency on 2 micron and above, constructed of carbon steel. The unit has (58) 14 oz. singed Nomex bags, 84" long providing 638 sq. ft. filter cloth area. The unit is complete with stainless steel cages, pulse jet compressed air cleaning mechanism, solid state timer (115 volt) in NEMA 4 enclosure, solenoid valves, diaphragm valves, air pressure gage, access platforms with handrail and ladder, and support legs from silo roof, Dwg. A1728-P1.
- 1 - Dual dump gate assembly for automatic bag filter, 10" diameter, air operated and solenoid actuated with limit switch, Dwg. A1792-B.
- 2 - Pneumatic vibrators to promote fine ash discharge.
- 2 - Pneumatic vibrators to promote fine ash discharge.

6.4 Mechanical Vacuum Exhausters

- 2 - Mechanical exhauster units, Roots 827 RCS shipped complete with, Dwg. A1784A:
 - 1 - 125HP, 1800 RPM TEFC squirrel cage induction type motor with space heaters.
 - 1 - V-belt drive from motor to blower, with guard.
 - 1 - Inlet silencer.
 - 1 - Exhauster silencer.
 - 1 - Vacuum gage.
 - 1 - High vacuum switch, 24VDC.
 - 1 - High inlet air temperature switch, 24VDC.
 - 1 - Blower and motor structural steel support stand.
 - 1 - Vacuum relief valve.
- 1 - Guard filter assembly, Dwg. A1785A.
- 2 - Air operated, solenoid actuated butterfly valves, 10" dia. for mechanical exhauster selection.
- 1 - Vacuum breaker, air cylinder operated, solenoid actuated, Dwg A1501-M3C.
- 1 - Lot, necessary air piping from receiver/filter, nuts, bolts and gasket material for assembly of above.

6.5 Acoustical Enclosure for Vacuum Exhausters

- 1 - Acoustical enclosure for vacuum exhausters constructed with 4" thick perforated interior wool felt packed panels for walls and roof, inlet vent silencer, powered exhaust vent and double door for maintenance access.

6.6 Ash Storage Silo

- 1- Ash storage silo, 25'-0" inside dia. X 37'-0" approximate straight wall height (including 5'-0" freeboard) with 60 degree cone bottom, skirted to grade providing unloading area enclosure complete with skirt openings providing 16'-0" high, 12'-0" wide truck clearance, assembly clips, fabricated of 1/4"; 5/16"; 3/8" and 1/2" steel plate, knocked down for field welding with a live discharge capacity of 14,000 cubic feet (315 tons).
- 1- Silo shell extension for enclosing roof mounted equipment.
- 1- Unloader level floor with grating section to see transport vehicle.
- 1- Lot, roof steel and framing for support for receiving equipment.

- 1- Stairway extending from grade to ash unloader platform and ladder from unloader platform to silo roof level.
- 1- Safety type manhole frame and cover.
- 2- Double door for equipment access at unloader roof levels with safety handrail
- 2- Pedestrian door with louver at unloader and roof levels.
- 2- Monorail beam extending beyond outside wall of enclosure at unloader and roof levels, 1000 lb capacity. (hoist by others).
- 4- Windows for silo unloader and roof levels.
- 1- Silo combination vacuum/pressure relief valve.

6.7 Ash Silo Vent Filter

- 1- Pulse jet silo vent filter constructed of carbon steel complete with (25) polyester felt filter bags, 58" long (180 sq. ft. cloth area) and compressed air cleaning mechanism, Dwg. A1781-1.

6.8 Silo Fluidizing (Aeration) Equipment

- 72- Aeration pads (6 rows of 12 pads), Dwg. A1775.
- 2 - Pressure blower unit, Roots 718 URAI each complete with:
 - 1 - 40 HP, 1800 RPM TEFC squirrel cage induction type motor with space heaters and adjustable base for V-belt, 480 volt, 3 phase, 60 Hertz.
 - 1 - V-belt drive, from motor to blower with guard.
 - 1 - Air inlet filter.
 - 1 - Air inlet silencer.
 - 1 - Air discharge snubber.
 - 1 - Pressure gage.
 - 1 - High discharge pressure switch, 24VDC.
- 2 - Air operated, solenoid actuated butterfly valves, 6" dia. for aeration blower selection.

6.9 Ash Silo Unloading Equipment

- 1- AshTech Model M-16 mixer-unloader (80 TPH discharge rate) each complete with 15 HP, TEFC drive; and rotary feeder with 1 HP variable speed motor drive, Dwg. A1804.
- 1- 14" dia. air cylinder operated knife gate valve, Dwg. A1793.

6.10 Electrical Controls

- 1- Silo unloading control panel, NEMA 12 enclosure, 120 volt, complete with Omron or equal programmable logic controller, and all necessary relays, push buttons, selector switches, indicating lights, etc. prewired with external connections brought to terminals.
- 1- Vacuum sensing transmitter.
- 1- Temperature transmitter.
- 3 - Differential pressure switches for pulse jet bag filter, vent filter and guard filter, 24VDC.
- 1 - Ultrasonic level indicator for storage silo.
- 1- Broken bag detector for receiver/filter, Bindicator or equal.
- 1- Pressure switch to prevent auto sequence operation with insufficient air pressure.
- 1- Water pressure switch for paddle mixer.
- 1- Lot, solenoid valves, 24VDC for air operated devices.

6.11 System Engineering Design and Manuals

- Mechanical Design
- Electrical Design
- Control Logic in Ladder Format
- System General Arrangement Drawings
- System Schematic Wiring Diagrams
- (3) System Operation and Maintenance Manuals.

6.12 Painting

National will apply one coat of prime paint to all structural and plate work.

6.13 Commissioning & Operator Training

National will dispatch its service engineer for 1 trips totaling 5 days to provide the following services during commissioning of systems covered by this proposal:

- Final pre-start up inspection of installation.
- Verify proper lubrication and directional direction of all rotating machinery.
- Dry run check of proper interface between customer's PLC/DCS and remote system electrical devices (i.e. limit switches, solenoid valves, etc.)
- Dry run of systems to verify correct functioning of programmable logic.
- Perform no-load settings for all equipment sensors and instrumentation (i.e. vacuum switches, pressure switches, speed controls, etc.)
- Monitor system operation under load condition and perform electrical, mechanical adjustments which may be required, including final setting of field instrumentation.
- Conduct classroom and on site formal instruction in the following:
 - System operation (how it works)
 - System safety provisions and interlocks
 - Start up & shut down procedures
 - Emergency by pass provision
 - Fault diagnostics
 - Trouble shooting-malfunction analysis
 - Periodic maintenance procedures
 - Review of operation and maintenance instruction manual.

Note:

If the services of National's engineer(s) or factory technician is required for causes not attributable to National Conveyor Company, such services will be billed at a rate of \$860.00 per 8 hour day plus documented and reasonable out of pocket expenses.

7.1 PURCHASE PRICES

For furnishing the equipment as listed in our
Equipment & Services Provided, we quote the sum of **\$1,349,717**
(The above price includes the sum of \$60,000 Contingency Amount)

7.2 OPTION

For servicing each additional PJFF hopper as listed in
section 6.1B above we quote **\$5,899 each**

7.3 MODIFICATIONS

We quote the following unit prices for changes to the specified pipe routing:

8" Centrifugally Cast Pipe	\$52 per foot
8" 90 ⁰ Elbow with Wearback	\$1,424 each
8" 45 ⁰ Elbow with Wearback	\$1,428 each
8" Junction Tee with Wearback	\$1,467 each
8" 45 ⁰ Lateral with Wearback	\$1,349 each

The above prices are exclusive of taxes and are for equipment only, F.O.B. our shops
East Granby, Connecticut and other shipping points and includes freight charges to
Rochester, Minnesota

8.0 TERMS OF PAYMENT

Our terms are 95% Net within 30 days on partial billings for engineering and for
equipment as shipments are made and balance of 5% after acceptance not to
exceed 120 days from date of final shipment.

9.0 SHIPMENT

We will furnish a complete set of general arrangement drawings within 45 working
days after receipt of an order and necessary information to perform the work. We
agree to ship equipment and material in this proposal within 24-28 weeks, based on
timely final approval of this proposal and prompt approval of drawings by you.



10.0 ITEMS & SERVICES TO BE FURNISHED BY PURCHASER OR OTHERS

- a) All erection labor and supervision of erection;
- b) Concrete, reinforcements, anchor bolts, including design of footings; foundations; floors; trench walls; etc.
- c) Compressed air supply, piping, valve, etc.;
- d) All field electric wiring and conduit including conduit schedules and routings;
- e) Electrical controls including motor starters and implementation of programmable logic;
- f) Field painting, including prime painting of conveyor pipe and fittings, if required and finish painting of all equipment as required;
- g) Unloading of equipment and protected storage prior to installation;
- h) Openings and flashings through building roof and walls including pipe sleeves;
- i) Proper lubrication of equipment prior to start-up;
- j) Flanged outlets, 12" diameter (straddle centerline) on ash collection hoppers;
- k) DCS and/or programmable controllers, remote I/O panels, control logic, etc.
- l) Pipe bridges, support and hanger steel other than that specified;
- m) Heating, lighting, fire protection, insulation, ventilation, etc. for enclosed areas of silo;

and all other items not listed in our Equipment Services Provided.

11.0 COMMENTS AND EXCEPTIONS TO THE SPECIFICATIONS

"We certify that this bid complies with all inquiry documents and specifications, except as noted in the following specific area of this bid entitled 'exceptions'."

11.1 Sample Purchase Agreement-Article 8-Liquidated Damages:

It has been our policy not to accept liquidated damage clauses. We would welcome an opportunity to discuss this in more detail, such as a 5% limitation of maximum liquidated damages and negotiation of delivery dates prior to damages being accessed.

11.2 Sample Purchase Agreement-Article 5.1-Paragraph 3:

Our auto policy will not include the City of Rochester as Additional Insured as our auto policy does not contain a cross-liability or a severability of interest clause.

11.3 Sample Purchase Agreement-Article 5.2-Required Coverage:

Please note that this is not applicable as we are not doing any installation work.

11.4 Sample Purchase Agreement-Article 12-Warranty:

Please see Section 13 of this Proposal for our standard warranty specifically that inasmuch as we are not responsible for installation warranties shall be for repair or replacement of defective materials, F.O.B. Rochester, MN.

11.5 SECTION 15550-Paragraph 2.1.I.3:

We include a filter with an air to cloth ration of less than 1:1 during normal ash collection operation. When the aeration is in use during silo unloading, the air to cloth ration will be approximately 6.8:1.

11.6 SECTION 15550-Paragraph 2.1.I.4:

Dump gates are not required fro the silo vent filter and are not included.

11.7 SECTION 15550-Paragraph 2.1.J.2:

We include two stage ash separation as specified which is recommended for bottom ash collection and collection of highly abrasive ash.

We include a pulse jet filter with an air to cloth ratio of 5:1 (in lieu of 3:1) that our experience shows is recommended to achieve required collection efficiencies and minimize dust emission. Based upon limited dust loading that occurs when two stage ash separation is provided, a cake build up on the filter bags can be achieved and maintained more efficiently.

11.8 SECTION 15550-Paragraph 2.1.L.5:

The ash paddle mixer is not chain driven (the rotary feeder is chain driven).



RESOLUTION

BE IT RESOLVED by the Public Utility Board of the City of Rochester, Minnesota, to approve a contract agreement with National Conveyor Corporation and request the Mayor and the City Clerk to execute the agreement for

Supply of Ash Handling and Storage System Package
Emissions Reduction Project

The amount of the contract agreement to be ONE MILLION THREE HUNDRED FORTY-NINE THOUSAND SEVEN HUNDRED SEVENTEEN AND 00/100 DOLLARS (\$1,349,717.00) and National Conveyor being lowest responsible bidder.

Passed by the Public Utility Board of the City of Rochester, Minnesota, this 30th day of January, 2007.

President

Secretary