

CONFIDENTIAL

"Conveyor Cost Estimates"

CONFIDENTIAL
DECLASSIFIED
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FLORIDA PUBLIC SERVICE COMMISSION
DOCKET
NO. 031033-EI *CONFIDENTIAL 108*
COMPANY/ CSX
WITNESS:
DATE 3/27-28/04 + 6/10/04

DOCUMENT NUMBER - DATE

06658 10/11

FPSC - COMMISSION CI FRK

PSC Docket No. 031033-EI
In Re: TECO Coal Transportation
Exhibit _____
Guletsky LFDE No. 1 - Conveyor Cost
Estimates

Project No. 09476-020

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 Benchmark Analysis of Belt Conveyor Cost Guidelines
 Tampa Electric

Roberts & Schaefer Company						
Width (in)	Lift (ft)	Length (ft)	Equipment Cost (\$)	Equipment Cost (\$/ft)	S&L Model Equipment Cost (\$/ft)	% Difference
60	58	267	310,000	1,161	1,156	-0.47
60	58	267	310,000	1,161	1,360	14.60

FMC Material Handling Systems						
Width (in)	Lift (ft)	Length (ft)	Equipment Cost (\$)	Equipment Cost (\$/ft)	S&L Model Equipment Cost (\$/ft)	% Difference
42	53	204	494,935	2,426	2,502	3.03

1. The S&L Belt conveyor cost model provides data for nine belt widths. Each belt width has cost data for three conveyor lengths (i.e. the longer the conveyor the lower the price per linear foot). Eight different conveyor arrangements are costed for the 27 cases (216 data points).
2. The R&S quote is benchmarked against two different cost categories. This equipment is being retrofit into an existing facility such that the main support will be obtained from existing steel structures. The first benchmark represents the cost for an at grade conveyor with hoods. The second adds conveyor gallery steel and trusses. We would expect the cost to be bracketed within these two cost categories.
3. Data pages provided with the quotations are attached. Information not pertinent to the cost benchmarking has been removed.
4. This benchmark information is confidential.

Paul Duszky
Ben Williams
Sam Madan

Date: March 10, 2004

**PROPOSAL DATA FOR
COAL HANDLING SYSTEM**

NAME OF BIDDER: FMC Energy Systems

**1. NET WEIGHTS (not shipping weight)
(lb.) as follows:**

2. BELT CONVEYORS AND FEEDERS

Conveyor/Feeder Designation Number:						
2.1	Width	(in)	[42]	[]	[]	[]
2.2	Capacity	(TPH)	[]	[]	[]	[]
2.3	Speed	(fpm)	[]	[]	[]	[]
2.4	Lift	(ft)	[53]	[]	[]	[]
2.5	Length along belt line	(ft)	[204]	[]	[]	[]
2.6	Type of take-up		[Gravity]	[]	[]	[]
2.7	Take-up travel	(ft)	[4.5]	[]	[]	[]
2.8	Pulley manufacturer		[Dodge]	[]	[]	[]
2.9	Type of hubs		[HE]	[]	[]	[]

Date: March 10, 2004

PROPOSAL DATA FOR COAL HANDLING SYSTEM

NAME OF BIDDER: FMC Energy Systems

- 2.10 Bearing manufacturer [Dodge]
- 2.11 Type of bearing [USAF-Roller]
- 2.12 Shifting material [1045]
- 2.13 Pulley and Shaft Diameters
- a. Drive (in) [24]
 - b. Tail (in) [20]
 - c. Snub (in) [N/A]
 - d. Bend (in) [16]
 - e. Take-up (in) [20]
 - f. Tripper (in) [N/A]
- 2.14 Pulley Lagging:
- a. Type of drive pulley [Herringbone]
 - b. Type of snub and bend pulleys [Plain]
- 2.15 Idlers:
- a. Troughing:
 - a1. Manufacturer [FMC Energy Systems]
 - a2. Catalog number and type [C3628S, 35 Deg.]
 - a3. CEMA rating and roll size [C, 6"]
 - b. Return:
 - b1. Manufacturer [FMC Energy Systems]
 - b2. Catalog number and type [C3617S, C]
 - b3. CEMA rating and roll size [C, 6"]
 - c. Training idlers:
 - c1. Manufacturer [FMC Energy Systems]
 - c2. Catalog number and type for:
 - c2.1 Troughing [C3632S, Pos. Acion]
 - c2.2 Return [C3220S, Pos. Acion]
 - c3. CEMA rating and roll size [C, 6"]
 - d. Impact idlers:
 - d1. Manufacturer [FMC Energy Systems]
 - d2. Catalog number and type [C3630S, Rubber]
 - d3. Catalog number and CEMA rating and roll size [C, 6"]

Date: March 10, 2004

PROPOSAL DATA FOR
COAL HANDLING SYSTEM

NAME OF BIDDER: FMC Energy Systems

2.16 Belt

- a. Manufacturer [Goodyear]
- b. Trade name [Plykon Plus]
- c. Length, including splice (ft-in) [458'-0"]
- d. Splice allowance length included (ft-in) [7'-0", Single Length]
- e. P.I.W.:
- e1. Calculated maximum [193]
- e2. Allowable (mechanical splice rating) [250]
- f. Number of plies [2]
- g. Fabric type [Nylon]
- h. Cover:
- h1. Top cover thickness (in) [0.230]
- h2. Bottom cover thickness (in) [0.0625]
- i. Weight per foot length (lb/ft) [9.3]

2.17 Conveyor/Feeder Speed Reducer:

- a. Manufacturer [Sew Eurodrive]
- b. Type and model [MC3P1SF06]
- c. Horsepower:
- c1. Required by driven equipment (hp) [87]
- c2. Reducer mechanical rating (hp) [204]
- c3. Reducer thermal rating (hp) [160]
- c4. Required at motor shaft (hp) [125]
- d. Service factor [1.63]
- e. Speed:
- e1. Input (rpm) [1800]
- e2. Output (rpm) [77]

2.18 Backstop or Brake:

- a. Manufacturer [Form Sprag]
- b. Type and model [Longlife 1.1H-800]
- c. Rated torque (ft/lb) [11,500]
- d. Service factor [Per Motor Breakdown Torque]
- e. Maximum speed (rpm) [108]

2.19 Coupling:

Date: March 10, 2004

PROPOSAL DATA FOR
COAL HANDLING SYSTEM

NAME OF BIDDER: FMC Energy Systems

- a. Manufacturer [Transfluid]
- b. Type and model
- b1. Reducer input [Field 17KCM]
- b2. Reducer output [Gear F4]
- c. Rated torque (N/b) [18,375]
- d. Bore:
 - d1. Reducer input (in) [1.189]
 - d2. Reducer output (in) [5.118]
- 2.20 Quantity of belt cleaning devices on each conveyor/feeder:
 - a. Primary belt scrapers [1]
 - b. Secondary belt scrapers [1]
 - c. Snub pulley cleaners [1]
 - d. V-plow cleaners [2]

Δ

Date: March 10, 2004

**PROPOSAL PRICES FOR
COAL HANDLING SYSTEM**

NAME OF BIDDER: FMC Energy Systems

- 1.0 EQUIPMENT PRICE - (For complete WORK as covered by the Technical Specification) Ex Works, point of manufacture.
- 1.1 Firm price for Coal Handling System complete with all accessories.
- 1.2 Mandatory installation, commissioning and startup spare parts and consumables.
 - 1.2.1 Taxes at 5%
- 1.3 Total Firm Price \$3,633,525.00
- 1.4 Bidder to identify above Ex Works location(s) Included in Sec. 9 of Proposal
- 2.0 TOTAL FIRM PRICE BREAKDOWN - Price breakdown for design, fabrication, furnish and delivery of the following equipment and material. (Total to equal 1.1)
- 2.1 Two (2) belt feeders in transfer house 4
- 2.2 Two (2) belt feeders in Unit 3 transfer conveyor bay
- 2.3 Two (2) ring granulators
- 2.4 Conveyors \$494,935.00
- 2.5 Conveyors
- 2.6 Two (2) traveling trippers including festooned cable system, rails
- 2.7 Two (2) crusher bypass gates including manual operated Limatorque
- 2.8 Rod gates
- 2.9 Tripper floor slot seal belt and mechanism
- 2.10 Conveyors drive components
- 2.11 Chutework and skirt boards
 - a. Transfer from transfer hoppers belt feeders to conveyors
 - b. Transfer from conveyor 13A to 14A and from conveyor to Included in Item 2.4
 - c. Balance chutework Included in Individual Conveyor / Feeder Sections
- 2.12 Dust collector, exhaust fans, dampers, rotary air lock, diverter gate, ductwork, supports, stairs
- 2.13 Cyclone, separator, rotary air lock, diverter gate

PP-1

1-2

Material Handling Systems
Conveying and Processing Equipment

C
C

Date: March 10, 2004

PROPOSAL PRICES FOR
COAL HANDLING SYSTEM

NAME OF BIDDER: FMC Energy Systems


2.14-b		
2.15		
2.16		
2.17		
2.18		

2.19	Conveyors	galley steel, siding, bulk heads	[Included in Item 2.4]
2.20	Trolleys and hoists		[]
2.21	Electrical		[]
2.22			[]
2.23			[]
2.24	List equipment and material (itemized) not included above		[See Below]
a.	Electrical Engineering		[]
b.	Start-Up Spares		[]
c.	Miscellaneous		[]
d.			[]
e.			[]
f.			[]
g.			[]
h.			[]
2.25	Total (equal to 1.1)		[\$3,460,500.00 Plus taxes \$173,025.00]

3.1		
3.2		
3.3		

Other Options

FP-2

C C		Date: March 10, 2004
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PROPOSAL PRICES FOR
COAL HANDLING SYSTEM

NAME OF BIDDER: FMC Energy Systems

3.4 Budget Price for Erection Based on Non-Union Labor [ADD \$1,929,000.00 to Item 1.3]

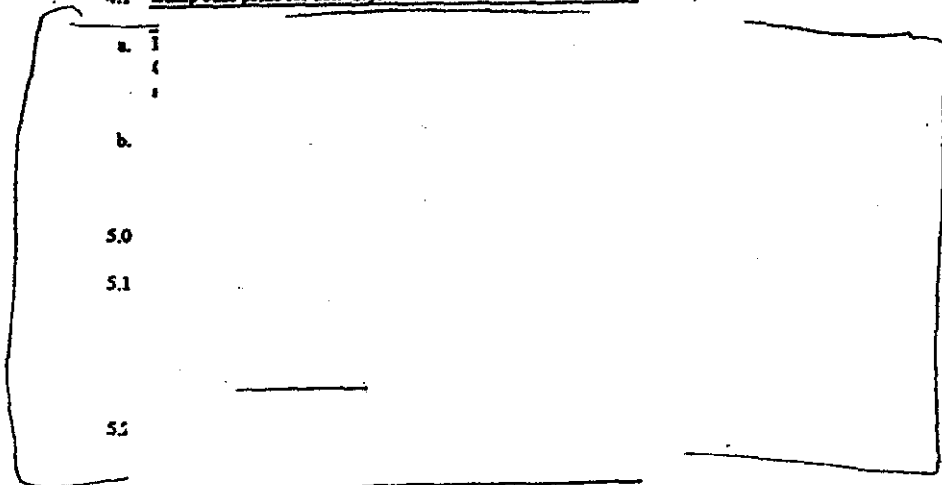
3.6

3.7

3.8

4.0 SHIPPING

4.1 Lump sum price for delivery: ADD \$73,611.00 to Item 1.3



6.0 SPARE PARTS

6.1 Price for maintenance spare parts To be attached by Bidder (Included in this section of this Proposal)

7.0 SERVICE ENGINEER

7.1 Price per working day for field service engineer Refer to page titled "Technical Services - Field Representatives" included in this section of proposal

7.2 Price per working day for start-up engineer Refer to page titled "Technical Services - Field Representatives" included in this section of proposal

7.3 Transportation expense for one round trip to the project site Refer to page titled "Technical Services - Field Representatives" included in this section of proposal

PP-3



**UNLOADING CONVEYOR MODIFICATIONS
COAL HANDLING SYSTEM UPGRADES**

PROPOSAL DATA

NAME OF BIDDER: Roberts & Schaefer Company
INSERT ALL INFORMATION WITHIN BRACKETS

NET WEIGHTS (Not shipping weights)
(lb):

Equipment	[]	[]	[]	[]	[]	[]	[]	[]
Total net weight (sum of all Items) (lb)	[]	[]	[]	[]	[]	[]	[]	[]

MAJOR EQUIPMENT DATA, corresponding to specified design conditions

	r	t	r	t	r	Conveyor	r
Belt Conveyor / Feeder Data:							
Manufacturer						[R&S]	
Width.....(in)						[60]	
Capacity (TPH)							
Speed..... (fpm)							
Lift..... (ft)						[56]	
Length along belt Line						[267.0]	
Type of take-up						[Gravity]	
Pulley Manufacturer						[Dodge]	
Type of hubs.....						[HE]	

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Belt Conveyor / Feeder Data:

Bearing Manufacturer

Type of bearing

Shafting Material.....

Pulley diameter (Drive).....(in)

Shaft diameter (Drive).....(in)

Pulley diameter (tail).....(in)

Shaft diameter (tail).....(in)

Pulley diameter (snub)(in)

Shaft diameter (snub)(in)

Pulley Lagging:

Type for drive pulley.....

Type for snub and bend pulley.....

Troughing Idlers:

Manufacturer

Catalog number and type.....

CEMA rating and roll size.....

Return Idlers:

Manufacturer

Catalog number and type.....

CEMA rating and roll size.....

Training Idlers:

Manufacturer

Catalog number and type for troughing

Conveyor

[Dodge]

[SRP
Spherical]

[C1045]

[24]

[7.5]

[20]

[6.5]

[20]

[3-15/16]

[1/2" HBGL]

[1/2" Plain]

[Rexnord]

[60-D6400
45°]

[D6]

[Rexnord]

[60-D6040
Flat]

[D6]

[Rexnord]

[60-D6412
45°]

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Conveyor

[60-D6052
Flat]

[D6]

[New Hood
& Chute]

[1/4"]

[St. Steel]

[3/16"]

[G.A. Duck]

[Power Plus]
[585]

[1x6']

[259]

[600]

[4]

[Polyester]

[3/16]

[1/16]

[18.0]

Belt Conveyor / Feeder Data:

Catalog number and type for return

CEMA rating and roll
size

Hood and Chute
Work.....

Hood and Chute Work thickness... (in)

Type of liner.....

Liner thickness(in)

Belt:

Manufacturer

Trade Name.....

Length, including splice(ft-in)

Splice allowance length included (ft-in)
.....

P.L.W.:

Calculated Maximum

Allowable (mechanical splice rating) ..

Number of plies.....

Fabric type.....

Cover:

Top cover thickness.....(in)

Bottom cover thickness(in)

Weight per foot length..... (lb/ft)



Belt Conveyor / Feeder Data:

Speed reducer
 Manufacturer.....

 Type and model.....
 Horsepower:
 Required by driven equipment.....(hp)
 Reducer mechanical rating.....(hp)
 Reduce thermal rating.....(hp)
 Required at motor shaft.....(hp)
 Service factor.....
 Speed:
 Input..... (rpm)
 Output..... (rpm)
 Backstop or Brake:
 Manufacturer.....
 Type and model.....

 Rated torque..... (ft/lb)
 Service factor.....
 Maximum speed..... (rpm)
 Coupling:
 Manufacturer.....
 Type and model.....
 Reducer input.....
 Reducer output.....
 Rated torque..... (ft/lb)
 Bore reducer input.....(in)

Conveyor

[Falk]
 [Para-
 MI170DH2]

 [257.2]
 [532]
 [378]
 [273.6]
 [1.52]

 [1750]
 [121.6]

 [Falk]
 [NRT]
 [1095,
 28000]
 [1.5]
 [300]

 [Falk]
 [Fluid]
 [1584HFD]
 [1140T10]
 [21,069]
 [2,5591]

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Belt Conveyor / Feeder Data:

Bore reducer output.....(in)
Quantity of belt scrapers

Conveyor

[5.118]
[2]

Safety Switches:

Manufacturer,
Model number,
NEMA enclosure type.....
Quantity.....

ELECTRICAL DATA

Conveyor Motors

Manufacturer,

Type.....

Enclosure.....

Horsepower Rating.....

Conveyor

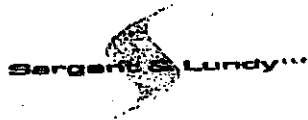
[]

[Reliance]

[Induction
(SC)]

[TEFC-
Washdown]

[350]



ELECTRICAL DATA

Voltage, phase, frequency

Speed at full load.....

Type of bearings.....

Insulation Class

Temperature rise (by resistance) above
50°C ambient of the windings when
operating at rated hp continuously.....

Service factor at rated hp.....

Conveyor

[460/3/60]

[1750]

[A/E]

[F]

[80]

[1.15]

15

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**UNLOADING CONVEYOR MODIFICATIONS
COAL HANDLING SYSTEM UPGRADES
POWER STATION**

PROPOSAL PRICES

NAME OF BIDDER: Roberts & Schaefer Company

INSERT ALL INFORMATION WITHIN BRACKETS

1.	FIRM LUMP SUM PRICE, for the complete work covered by Specification based on meeting all conditions on the Bid Documents, unless exceptions are specifically listed and identified as such in the Proposal. Without limitation, it is understood that this price is firm, and <u>not</u> subject to adjustment due to changes in cost of labor or materials, or to any other factor, except changes in the scope of work or other causes specifically stated in the Contract (Sum of Items 1.1 through 1.4)		
1.1	Amount included in the above Firm Lump Sum Price (Item 1) for Equipment & Material.....		
1.2	Amount included in the above Firm Lump Sum Price (Item 1) for field labor associated with installation of equipment and material and modification to existing structures		
1.3	Amount included in the above Firm Lump Sum Price (Item 1) for Construction Management including start-up personnel		
1.4	Amount included in the above Firm Lump Sum Price (Item 1) for Freight		
2.	AMOUNT included in the above Firm Lump Sum Price (Item 1) for the following equipment:	EQUIPMENT AND FREIGHT COSTS	INSTALLATION COST
2.1	{	
2.2	{	
2.3	{	
2.4	{	
2.5	Conveyor	[\$310,000]	[\$190,000]
2.6		
2.7	{	
2.8	Existing Building Modifications.....	{	
2.9	SCR for Conveyors	{	}
2.10	Field Devices	{	
2.11	Conveyor C Head End Repairs	{	
2.12	Reclaim Hopper 18	{	}
2.13	Tripper Modifications.....	{	}
2.14	Conveyor Belt Scale	{	}
2.15	Engineering Design.....	[\$ 350,000]	[\$ Not applicable]
2.16	Remaining Items.....		



2.17 Start-Up Assistance	[\$10,000]	[\$30,000]
SUB TOTAL OF ITEM 2.0	[1]

TAXES ON THE MATERIAL PORTION OF THE CONTRACT

3.1 Contractor shall confirm that sales tax has been included in the bid price by writing: "Sales tax included".....

4.0 BID VALIDITY

4.1 Bidder hereby agrees that his proposal shall remain valid for acceptance by Owner for a period of 90 days from the bid.
Due date..... (Answer Yes/No)

5. The following constitutes the terms and conditions for Time and Material Rates:

5.1 Materials including freight and taxes, if applicable, shall be invoiced

5.2 Subcontractors' work shall be invoiced at:

5.3 AZCO INC. equipment shall be invoiced:
Rental rates shall include insurance, property tax, interest, depreciation cost, cost of repairs and equipment operating costs.

5.4 Equipment must be in first class condition when arriving on job site.....

5.5 Owner will not be responsible for repairs of equipment.

5.6 Labor charged to Owner.

5.7 Third party rental equipment costs :

Third party equipment must be in first class condition when arriving on job site. Owner will not be responsible for repairs.

5.9 Consumables Costs:

5.10 Small tools costs with a value of one-thousand dollars (\$1000.00) or less are:

5.11 Where applicable per union agreement costs for travel and worker subsistence, including taxes.....

5.12 Unless Contractor can demonstrate that extra work is the sole cause of schedule extension, there should be no charge for extended overheads and/or project manager/superintendent costs on extra work.....