



TAMPA ELECTRIC COMPANY BIG BEND POWER STATION

Project Number 28975-001

COAL FIELD STUDY – PHASE II

Prepared for



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Coal Field Study - Phase II Report

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1.0 EXECUTIVE SUMMARY

1.1

1.2 1.1 Background

Tampa Electric Company (TEC) is planning to extend the operating life of their Big Bend Power Plant by approximately 20 years. In order to achieve and maintain the required plant availability and reliability throughout the station's extended operational life, TEC recognizes that major plant equipment / system upgrades and renovations will need to be implemented. These include major upgrades to the coal yard and coal handling system equipment and structures.

In Phase I of the Big Bend Coal Field Upgrade Study, Tampa Electric Company Authorized Washington Group International to provide support in the evaluation and condition assessment of the coal yard and coal handling system equipment and structures. Washington Group completed the Phase I evaluation / condition assessment and provided Tampa Electric with a Phase I Coal Field Study Report which described the condition of the coal handling facilities, structures and equipment. The Phase I report also included a spreadsheet which listed and prioritized recommendations for upgrading, refurbishing or replacing coal handling system equipment and machinery.

On May 22 and 23, 2007, Washington Group attended a meeting at Big Bend Station with Tampa Electric's Engineering and Station personnel to review and discuss the results of the Phase I Study and to identify critical Coal Yard Systems and equipment which TEC considered to be the highest priority for upgrading or replacement. At the meeting Tampa Electric identified the tasks and activities which would be undertaken and executed by Washington Group in support of Phase II of the Coal Field Study. These are listed in item 1.2 herein.

On June 16, 2007, Washington Group submitted Change Order Request No.1, Rev 2, to Tampa Electric to amend Work Order No. 1952143 to include the finalized Phase II work scope to be executed by Washington Group. The transmittal included a spreadsheet (Attachment A) with a detailed breakdown of the tasks, deliverables and completion dates for Phase II activities which would be executed by Washington Group.

1.3 1.2 Scope of Phase II

Washington Group agreed to Tampa Electric's request to perform the following activities in support of Phase II of the Big Bend Coal Field Study:



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- A. Preparation and issuance of minispecs to solicit budgetary quotations for the following:
1. Demolition and Removal of the existing Dravo Coal Barge Unloader, North Stacker and South Stacker-Reclaimer.
 2. Procurement and Installation of new Coal Barge Unloader(s).
 3. Procurement and Installation of new North and South Bucket Wheel Stacker-Reclaimers.
 4. Electrical and Control System Upgrades.
 6. Development of Estimated High-Level Engineering / Construction Schedule for Activities 1 through 4 above.
 7. Preparation and issuance of the Phase II Coal Field Study Report

1.4 1.3 Results and Recommendations

Washington Group has solicited and developed the estimated costs for the coal yard equipment upgrades and replacements described in item 1.2 above. The costs provided by equipment / system suppliers are tabulated in Attachment B, Phase II Capital Cost Comparison Summary Spreadsheet.

The following is a summary of the results and recommendations reached for each of the coal yard upgrade and replacement activities which were investigated.

1.3.1 Demolition and Removal Work

Budgetary quotations were received from all four of the solicited demolition contractors, CCC Group, Cleveland Wrecking, Florida Wrecking and Louisiana Chemical. Cleveland Wrecking's budgetary quotation of \$1,600,000 is the 'median' budgetary quotation of those submitted.

Recommendation

For the purpose of compiling the project pricing to be submitted to the Tampa Electric Board for project review and approval, Washington Group recommends that Cleveland Wrecking's budgetary quotation of \$1,600,000 to perform the demolition and removal work be used.

1.3.2 Coal Barge Unloader(s)

A. One (1) 4,000 TPH Capacity Continuous Coal Barge Unloader

Requests for budgetary quotations to furnish and erect one (1) 4,000 TPH capacity continuous barge unloader were issued to Metso Minerals, Heyl and Patterson, Tenova (Italimpianti) and TK Robins.



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Only Metso Minerals submitted a budgetary quotation to furnish and erect a single 4,000 TPH Continuous Barge Unloader. Metso submitted a budgetary quotation of \$14,000,000 to design and furnish the unloader based on 'replicating' the existing machine's design configuration with incorporation of a modern control system. Metso advised that present day erection costs are in the range of 60% to 70% of the delivered equipment cost, which is equivalent to an erection cost of \$9,800,000. This results in a total estimated cost of \$23,800,000 to furnish and erect the unloader.

The other solicited manufacturers, TK Robins, Heyl and Patterson and Tenova advised that they could not furnish a single machine of this capacity. Neither Heyl and Patterson or Tenova offered a proposal for alternate capacity continuous barge unloaders.

TK Robins submitted a proposal of \$32,800,000 to furnish and erect two (2) 2,000 TPH preassembled, Continuous Barge Unloaders.

Further evaluation and determination of the feasibility of accommodating, and coordinating the operation of, two Continuous Barge Unloaders on the existing dock will need to be completed if further consideration is to be given to this configuration.

B. Two (2) 2,000 TPH Equilibrium Crane Unloaders

Budgetary quotations to furnish and erect two 2,000 TPH capacity Equilibrium Cranes were received from both of the solicited manufacturers, E-Crane and Metso Minerals.

E-Crane submitted a budgetary quotation of \$13,169,000 and Metso submitted a budgetary quotation of \$16,000,000.

Further evaluation and determination of the feasibility of accommodating, and coordinating the operation of, two equilibrium crane unloaders on the existing dock will need to be completed if further consideration is to be given to this configuration.

C. One (1) 3,600 TPH Clamshell Type Unloader

Budgetary requests for quotations to furnish and erect one (1) 3,600 TPH Clamshell Type Unloader were issued to Metso Minerals and TK Robins. Both manufacturers responded that they could not furnish a single clamshell unloader which could unload coal at the requested capacity of 3,600 TPH.

Metso submitted a quotation of \$24,000,000 to furnish and erect two (2) 2,000 TPH capacity clamshell unloaders. TK Robins did not respond to the budgetary pricing request.



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Again, the feasibility of accommodating and coordinating two clamshell unloaders on the existing dock will need to be evaluated and determined.

Recommendation

For the purpose of compiling the project pricing to be submitted to the Tampa Electric Board for project review and approval, Washington Group recommends that the estimated budgetary cost of \$23,800,000 for Metso Minerals to furnish and erect one (1) 4,000 TPH Continuous Barge Unloader be used.

1.3.3 Two (2) 4,000 TPH Capacity Bucket Wheel Stacker Reclaimers

Budgetary quotations to furnish and erect the Bucket Wheel Stacker Reclaimers were received from the three solicited manufacturers, Metso Minerals, TK Robins and Tenova.

Metso Mineral's budgetary quotation of \$14,400,000 is the 'median' budgetary quotation of those submitted. The budgetary cost included by Metso for erection of the two Stacker Reclaimers is \$5,400,000. (Reference Attachment B).

In addition, budgetary quotations for erection only of the Bucket Wheel Stacker Reclaimers were received from erection contractors TIC and Central Maintenance and Welding.

TIC submitted a budgetary quotation of \$2,400,000 and Central Maintenance and Welding submitted a budgetary quotation of \$4,400,000 for erection of the Bucket Wheel Stacker Reclaimers. The accuracy of these budgetary quotations is questionable since the quotations are almost 100% apart. The budgetary quotation of \$4,400,000 from Central Maintenance and Welding is much closer to the budgetary quotation of \$5,400,000 from Metso than it is to TIC's low budgetary quote of \$2,400,000, which suggests that the TIC quotation is inaccurate. Washington Group recommends that the cost build-up for erection of the Bucket Wheel Stacker Reclaimers be based on Metso Minerals budgetary quotation.

Recommendation

For the purpose of compiling the project pricing to be submitted to the Tampa Electric Board for project review and approval, Washington Group recommends that the Metso Minerals budgetary cost of \$14,400,000 to furnish and erect two the (2) 4,000 TPH capacity Bucket Wheel Stacker Reclaimers be used.



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2.0 COAL YARD UPGRADES COST DEVELOPMENT METHODOLOGY

The following provides description of the methods employed and activities undertaken to develop the estimated costs required to implement the coal dock and coal yard equipment upgrades.

2.1 Demolition and Removal of the existing Dravo Coal Barge Unloader, North Stacker and South Stacker-Reclaimer

Requests for budgetary pricing for demolition and removal of the existing Dravo coal barge unloader, north stacker and south stacker-reclaimer, complete with minispec and existing equipment / facilities arrangement drawings, were developed and issued to Louisiana Chemical, CCC Group Inc., Florida Wrecking and Cleveland Wrecking on July 18, 2007. Budgetary quotations were received from all four contractors.

The Demolition Work minispec, supporting drawings and RFQ are provided in Attachment C.

The Demolition Work budgetary quotations and supporting proposal data are provided in Attachment D.

2.2 Procurement and Installation of new Coal Barge Unloader(s)

Requests for budgetary pricing ,complete with minispec and existing equipment / facilities arrangement drawings, for procurement and installation of the following new Coal Barge Unloading configurations were developed and issued to the equipment manufacturers.

Continuous Barge Unloader

Budgetary pricing requests to furnish and erect one (1) 4,000 TPH capacity Continuous Barge Unloader (CBU) were issued to Metso Minerals, TK Robins and Heyl and Patterson on August 29th, 2007. Only Metso submitted a budgetary quotation to furnish and erect a 4,000 TPH Continuous Barge Unloader. TK Robins submitted a quotation to furnish and erect two (2) 2,000 TPH "Roll-on, Roll-off" Continuous Barge Unloaders which require minimal erection activities



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and erection duration. Heyl and Patterson declined to bid stating that they do not manufacture CBU's of the requested capacity.

The 4,000 TPH Capacity Continuous Barge Unloader minispec, supporting drawings and RFQ are provided in Attachment E.

The Metso budgetary quotation to furnish and erect one (1) 4,000 TPH capacity Continuous Barge Unloader and the TK Robins budgetary quotation to furnish and erect two (2) 2,000 TPH capacity Continuous Barge Unloaders are provided in Attachment F.

Equilibrium Crane Unloaders

Budgetary pricing requests to furnish and erect two (2) 2,000 TPH capacity Equilibrium Crane Unloaders were issued to Metso Minerals and E-Crane on September 19, 2007. Budgetary quotations were received from both Metso Minerals and E-Crane. Since the Equilibrium Cranes are shipped in three major subassemblies they will also require minimal on-site erection activities and erection duration.

The Equilibrium Crane minispec, supporting drawings and RFQ are provided in Attachment G.

The Metso and E-Crane budgetary quotations to furnish and erect two (2) 2,000 TPH capacity Equilibrium Crane Unloaders are provided in Attachment H .

Clamshell Unloader(s)

Budgetary pricing requests to furnish and erect one (1) 3,600 TPH capacity Clamshell Unloader were issued to Metso Minerals and TK Robins on September 19, 2007. Both manufacturers responded that they could not furnish a clamshell unloader which could unload coal at the specified capacity of 3,600 TPH.

Metso Minerals submitted a budgetary quotation to furnish and erect two (2) 2,000 TPH clamshell unloaders. TK Robins did not respond to the budgetary pricing request.

The Clamshell Unloader minispec, supporting drawings and RFQ are provided in Attachment J.

The Metso budgetary quotation to furnish and erect two (2) 2,000 TPH capacity Clamshell Unloaders are provided in Attachment K.



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2.3 Procurement and Installation of new Bucket Wheel Stacker-Reclaimers

Budgetary pricing requests to furnish and erect two (2) 4,000 TPH capacity, bucket wheel stacker-reclaimers were developed and issued to Metso Minerals and TK Robins on August 9, 2007. Budgetary quotations were received from both of these equipment suppliers.

The Bucket Wheel Stacker Reclaimer minispec, supporting drawings and RFQ are provided in Attachment L.

The Metso and TK Robins budgetary quotations to furnish and erect two (2) 4,000 TPH capacity, bucket wheel stacker-reclaimers are provided in Attachment M.

2.4 Electrical and Control System Upgrades

Washington Group developed minispecs and obtained budgetary quotations for the following Electrical and Control System upgrades and replacements of equipment and materials:

DCS Based Control System

A request for budgetary pricing to furnish a DCS based control system to replace the existing coal yard control system located in the Blending Bins Control Room was issued to Emerson on June 21, 2007. A budgetary quotation to furnish, install and commission the DCS control system was received from Emerson on June 27, 2007.

S Feeder VFD's and Motors

A request for budgetary pricing to furnish twelve (12) Variable Frequency Drives and twelve (12) 20 HP motors to replace the existing 'S' Feeders drives and motors was issued to Rumsey Electric on July 23, 2007. A budgetary quotation to furnish twelve (12) Allen Bradley VFD's and twelve (12) GE 20 HP motors was received from Rumsey Electric on August 10, 2007.

Blending Bin Level Detectors

A request for budgetary pricing to supply six (6) ultrasonic level transmitters for Blending Bin Level indication was issued to equipment distributor Miller Energy on September 10, 2007. A budgetary quotation to furnish six (6) Siemens Sitrans LR400 Radar Level Transmitters was received from Miller Energy on September 13, 2007.

Fire Alarm Panel and Fire Wire



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A request for budgetary pricing to replace the existing fire alarm panel and fire wire with a new panel and fire wire was issued to equipment supplier Alison Control Inc. on August 06, 2007. A budgetary quotation to furnish the new panel and wire was submitted by Alison Control Inc. on August 8th, 2007.

Coal Yard 4160 V Power Supply Cable

The estimated cost to replace the existing 4160V Power Supply, from Transfer Tower T3 to the end of the coal yard at the barge unloading dock, was developed by Washington Group.

The requests for budgetary quotations for the Electrical and Control System upgrades described above are provided in Attachment Q.

The budgetary quotations and cost estimates for the Electrical and Control System upgrades described above are provided in the Attachment R.

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3.0 CONSTRUCTABILITY AND TIE IN CONSIDERATIONS

The following tabulation provides a qualitative assessment 'matrix' of the constructability and tie in requirements that need to be addressed for each of the new coal yard machines considered in this study report:

3.1 Constructability and Tie –In Qualitative Assessment Table

Installation Factor	(1) 4,000 TPH Continuous Barge Unloader	(2) 2,000 TPH Continuous Barge Unloaders	(2) 2,000 TPH Equilibrium Crane Unloaders	(2) 2,000 TPH Clamshell Unloaders	(2) 4,000 TPH Bucket Wheel Stacker Reclaimers
Fit within existing Dock arrangement	Yes, same physical design as existing machine	Yes but more congested, Present Unloader travel of 419' will be reduced with (2) CBU's and (1) Clamshell on dock	Yes but more congested, Present Unloader travel of 419' will be reduced with (2) CBU's and (1) Clamshell on dock	Yes but more congested, Present Unloader travel of 419' will be reduced with (2) CBU's and (1) Clamshell on dock	Not Applicable
Tie-In Difficulty	Moderate	Higher	Higher	Higher	Moderate
Erection Duration	Longer Erection Duration	Short Erection Duration for TK Robins "Roll-On, Roll-Off" machines	Short Erection Duration, Machines shipped in (3) major preassemblies	Longer Erection Duration	Moderate Duration if Machines Erected at Same Time
Difficulty of Erection Coordination with existing machines remaining operational	Moderate	Higher Difficulty	Higher Difficulty	Higher Difficulty	Existing Machines will have reduced stockout / reclaim travel
Ability to erect Machine(s) before removing existing machines from service and dismantling	Feasible	Feasible but higher coordination difficulty	Feasible but higher coordination difficulty	Feasible but higher coordination difficulty	Feasible
Coordination of Operation of new Unloader(s) with remaining Clamshell	Should be 'seamless' since machine is same footprint and design as existing Unloader	Will require modifications to present operational procedures for (1) CBU and (1) Clamshell	Could be difficult due to the radial swing motion of the Equilibrium Cranes	Will require modifications to present operational procedures for (1) CBU and (1) Clamshell	Not Applicable



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4.0 HIGH-LEVEL ENGINEERING/CONSTRUCTION SCHEDULE

The responses provided by each of the major equipment suppliers indicated long lead times for the fabrication and delivery of the equipment due, in part, to current market conditions. For example, TK Robins advised that delivery of the two 4,000 TPH capacity bucket wheel stacker reclaimers would be approximately 28 to 32 months after an award with an estimated additional 6 to 8 months for concurrent erection of the machines, resulting in a total lead time from contract award to operation of 34 to 38 months. The preliminary level 1 engineering and construction schedule included in Attachment R provides an overview of the durations required for each of the activities associated with implementation of the coal yard system and equipment upgrades.

5.0 RECOMMENDATIONS

5.1 Demolition Work

For the purpose of compiling the project pricing to be submitted to the Tampa Electric Board for project review and approval, Washington Group recommends that Cleveland Wrecking's budgetary quotation of \$1,600,000 to perform the demolition and removal work be used.

5.2 Coal Barge Unloader Recommendation

For the purpose of compiling the project pricing to be submitted to the Tampa Electric Board for project review and approval, Washington Group recommends that the estimated budgetary cost of \$23,800,000 for Metso Minerals to furnish and erect one (1) 4,000 TPH Continuous Barge Unloader be used.

5.3 North and South Yard Bucket Wheel Stacker Reclaimers Recommendation

For the purpose of compiling the project pricing to be submitted to the Tampa Electric Board for project review and approval, Washington Group recommends that the Metso Minerals budgetary cost of \$14,400,000 to furnish and erect two the (2) 4,000 TPH capacity Bucket Wheel Stacker Reclaimers be used.

5.4 Electrical and Controls Equipment and Material Upgrades

For the purpose of compiling the project pricing to be submitted to the Tampa Electric Board for project review and approval, Washington Group recommends that the budgetary cost of \$1,615,000 to implement the electrical and control equipment and material upgrades, as detailed in Attachment R, be used.

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ATTACHMENT A

PHASE 11 ENGINEERING WORKHOUR ESTIMATE AND SCHEDULE

TASK No.	MAJOR CAPITAL IMPROVEMENT PROJECTS	RESPONSIBLE PARTY	WASHINGTON GROUP PHASE II ACTIVITIES	WH	START DATE	FINISH DATE	COMMENTS
							Dates Based on Phase II NTP from TECO by 8/1/2007
1	N Stacker, S Stacker-Reclaimer and Drawn Unloader Demolition Work	Washington Group International	Develop, discuss and finalize with TECO acceptable equipment vendors and erection / demolition contractors Develop minispec to obtain budgetary quotations to dismantle and remove existing N Stacker and S Stacker-Reclaimer	8	6/1/2/2007	6/1/2/2007	
1.1				20	6/1/3/2007	6/1/5/2007	TECO to provide necessary maintenance / refurbishment of South Stacker-Reclaimer to maximize reliability / availability prior to decommissioning and dismantling of north stacker. Include drawings / details of existing machines. (based on 5 days for TECO review and comments return)
1.2			Issue draft Continuous Bucket Unloader, N Stacker and S Stacker-Reclaimer demolition minispec to TECO for review and demolition time frame input	1	6/18/2007	6/25/2007 (Actual 7/1/007)	
1.3			Incorporate TECO comments to minispec	4	7/1/2/2007	7/1/2/2007	
1.4			Issue Continuous Bucket Unloader, N Stacker and S Stacker-Reclaimer demolition minispec to Vendor(s)	1	7/18/2007	8/1/2/2007	(based on 2 weeks for budgetary quotation)
1.5			Review proposals, issue proposal clarification requests as necessary and provide TECO with final Budgetary quotations	16	8/1/2/2007	8/3/2/2007	
			Subtotal Task 1.	50			
2	New North and South Stacker/Reclaimers	Washington Group International	Contact Meiso, H&P, TK Robins and E-Crane to inform TECO's intentions to upgrade / replace major equipment in the coal yard and advise that a minispec will be generated and issued to solicit budgetary quotations by 7/1/007. Ask vendors to provide indication of interest and lead times for engineering and delivery	6	6/1/2/2007	6/1/2/2007	Determine Vendors' schedule / lead times for engineering and delivery and develop overall schedule through startup.
2.1			Develop minispec to obtain budgetary quotations to furnish and deliver two (2) 4000 TPH new Stacker-Reclaimers with an option for erection.	24	7/19/2007	7/24/2007	Include drawings / details of existing machines. Include operating and design criteria for new Stacker-Reclaimer (based on 5 days for TECO review and comments return)
2.2			Issue draft Stacker-Reclaimer minispec to TECO for review and installation time frame review / input	1	7/24/2007	7/31/2007	
2.3			Incorporate TECO comments to minispec	4	7/31/2007	7/31/2007	
2.4			Issue N and S Stacker-Reclaimer minispec to Equipment Suppliers	1	8/1/2/2007	8/29/2/2007	(based on 4 weeks for budgetary quotation)
2.5			Issue N and S Stacker-Reclaimer minispec to Erection Contractors	1	8/1/2/2007	8/29/2/2007	(based on 4 weeks for budgetary quotation)
2.6			Review proposals, issue proposal clarification requests as necessary and provide TECO with final Budgetary quotations	16	8/30/2/2007	9/5/2/2007	(Unnecly starts Vacation 8/10, returns 8/27)
			Subtotal Task 2.	53			

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PHASE 11 ENGINEERING WORKHOUR ESTIMATE AND SCHEDULE

3	New Barge Unloading Tower (to replace DRAVO)	Washington Group International						On 5/30/07 E-Cranes' Gerry Hoffman confirmed that the maximum unloading rate achievable by their largest machine is 2000 TPH. He suggested using 2 machines simultaneously. Determine Vendors' schedule / lead times for engineering and delivery and develop overall schedule through startup.
3.1			Develop minispec to obtain budgetary quotations to furnish and deliver one (1) 4000 TPH (1) Continuous Bucket Unloader with option for erection.	24	8/2/2007	8/6/2007		Include drawings / details of existing machines. Include operating and design criteria for CBU
3.2			Develop minispec to obtain budgetary quotations to furnish and deliver two (2) 2000 TPH E-Crane Unloaders with option for erection.	16	8/6/2007	8/8/2007		Include operating and design criteria for E-Cranes
3.3			Develop minispec to obtain budgetary quotations to furnish and deliver two (2) 2000 TPH Clamshell Unloaders with option for erection.	16	8/8/2007	8/10/2007		Include operating and design criteria for Clamshells
3.4			Issue CBU, Clamshell and E-Crane minispecs to TECO for review and installation time frame review / input	1	8/13/2007	8/20/2007		(JMKelly starts Vacation 8/10, returns 8/27, specs to be issued by JMK backup)
3.5			Incorporate TECO comments to minispec	4	8/27/2007	8/27/2007		(based on 5 days for TECO review and comments return)
3.6			Issue CBU, Clamshell and E-Crane minispecs to Equipment Suppliers	1	8/28/2007	9/26/2007		(based on 4 weeks for budgetary quotation)
3.7			Issue CBU, Clamshell and E-Crane minispecs to Erection Contractors	1	8/28/2007	9/26/2007		(based on 4 weeks for budgetary quotation)
3.8			Review proposals, issue proposal clarification requests as necessary and provide TECO with final Budgetary quotations	20	9/27/2007	10/1/2007		
			Subtotal Task 3.	83				
4	Controls Upgrades	Washington Group International						Replace existing Coal Field Control System in Blending Building Control Room with ADCS
4.1			Prepare minispec (Sheets with a Sketch) for pricing of DCS equipment.					Estimated I/O quantities will be used. Final specification will require TECO provided I/O list of existing system.
4.2			Obtain budgetary pricing for equipment and services.	24	7/10/2007	7/13/2007		
4.2			Provide input to estimating group for installation of DCS equipment	4	7/16/2007	7/17/2007		
4.3			Estimate quantity of drawings and time requirements for Control Room equipment demolition and new arrangements	4	7/17/2007	7/18/2007		
4.4			Estimate quantity of drawings needed for rewiring, data highway, remote I/O cabinets and DCS Room behind Units 1 & 2 Control Room	4	7/18/2007	7/19/2007		
4.5			Estimate miscellaneous instrumentation and installation allowance to provide twenty miscellaneous transmitters	4	7/19/2007	7/19/2007		TECO to define type and application of transmitters
4.6			Obtain budgetary pricing to supply six ultrasonic level instruments for Blending Bin Level indication.					
4.6			Provide estimate of time to produce new installation details and wiring diagrams.	4	7/20/2007	7/20/2007		
4.7			Electrical and Controls input to new towers and unloader equipment minispecs. Review minispecs and ensure I&C/Electrical controls are adequate.	12	7/3/2007	7/10/2007		
4.8			Replacement of fire alarm panel and fire wire. Provide mini spec for new panel and fire wire. Estimate time required for demolition of old panel and fire wire and installation of new panel and wire.	24	7/24/2007	7/27/2007		Unfortunately, TECO I&C Engineer was unavailable for assistance at time of trip. Additional information required to confirm scope.
			Subtotal Task 4.	80				

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PHASE 11 ENGINEERING WORKHOUR ESTIMATE AND SCHEDULE

5	Electrical Upgrades	Washington Group International										
5.1			Replace 4160V Power Supply (from Transfer Tower T3 to the end of the coal yard at Unloading Station)		8	8/1/2007	8/2/2007					
5.2			Replacement of (12) 20HP Motors and VSD's for the 'S' Feeders		24	8/4/2007	8/6/2007					
			Subtotal Task 5.		32							
6	Emergency Bypass Coal Feed to Plant											Deleted from scope per Bob Vysbisky 7/10/07 email
					0							
			Subtotal Task 6.									
7	Emergency Bypass Coal Feed to Plant Coordination											Deleted from scope per Bob Vysbisky 7/10/07 email
					0							
			Subtotal Task 7.									
8	Develop Detailed Project Engineering and Construction Schedule	Washington Group International	Develop High Level Project Engineering and Construction Schedule for implementation of each Equipment Demolition and Replacement		32	9/24/2007	10/4/2007					High Level Schedule (Not detailed Primavera) will include optimum sequencing of upgrades, demolition and erection / construction activities to minimize impact to plant operation and generation
			Subtotal Task 8.		32							
			Report will provide chronological description of evaluation of each system, equipment and structures and include details of selected upgrade / replacement modifications to be implemented. Report will also include comparison and evaluation of budgetary proposal for alternate unloader configurations and Stack-Reclaimers. Report will provide recommended equipment and supplier and recommended demolition / erection Contractors with rationale for recommendations.									Attachments to the Report will include: 1) Engineering and Construction Schedule 2) Budgetary Quotations for Equipment 3) Budgetary Quotations for Demolition/Erection Contractor(s) 4) Budgetary Quotes for Electrical and Controls Upgrade Work
9	Phase II Coal Field Study Report	Washington Group International			90	8/1/2007	10/4/2007					
					420							
			Subtotal Tasks 1 thru 9									
10	Project Management and Administration	Washington Group International			80	6/11/2007	10/4/2007					
			TOTAL WASHINGTON GROUP WHEESTIMATE		500							

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ATTACHMENT B

PHASE 11 CAPITAL COST COMPARISON SUMMARY SPREADSHEET

COST COMPONENT	Demolition and Removal: 1. Existing Dravo CBU 2. Existing North Stacker 3. Existing South BWSR			Supply and Erect: (2) 4,000 TPH BWSR's			Remarks
	CCC Group	Cleveland Wrecking	Florida Wrecking	Louisiana Chemical	Metsco	Tenova	
Suppliers / Contractors							
Disassemble, Dismantle, Demolition, Removal	\$2,600,000	\$1,600,000	\$982,285	\$2,050,000			
Engineer, Procure and Deliver					\$9,000,000	\$8,862,500	\$17,750,000
Installation / Erection (Equipment Manufacturer)					\$5,400,000	\$2,600,000	\$6,200,000
Installed Equipment / Systems Subtotal							
MANUFACTURER'S BUDGETARY INSTALLED CAPITAL COST (2007)	\$2,600,000	\$1,600,000	\$982,285	\$2,050,000	\$14,400,000	\$11,462,500	\$23,950,000
Installation / Erection (Erection Contractor)						\$2,400,000	TIC
						\$4,400,000	Central Maintenance & Welding
BUDGETARY INSTALLED CAPITAL COST USING TIC FOR ERECTION (2007)					\$11,400,000	\$11,262,500	\$20,150,000
BUDGETARY INSTALLED CAPITAL COST USING CM & W FOR ERECTION (2007)					\$13,400,000	\$13,262,500	\$22,150,000

Coal Field Study - Phase II Report

ATTACHMENT B

PHASE 11 CAPITAL COST COMPARISON SUMMARY SPREADSHEET

COST COMPONENT	Supply and Erect: (2)12,000 TPH E-Cranes		Supply and Erect: (2)12,000 TPH Grabbell Unloaders		Supply and Erect: (1)3,600 TPH Grabbell Unloader		Supply and Erect: (1)4,000TPH CBU			Supply and Erect (2) 2,000 TPH CBUs	Remarks
	Metsu	E-Crane	Metsu	TKRobbins	Metsu	TKRobbins	Metsu	Tenova	TKRobbins		
Suppliers / Contractors											
Engineer, Procure and Deliver	\$11,000,000	\$13,169,000	\$16,000,000	No Bid	No Bid	No Bid	\$14,000,000	No Bid	No Bid	\$32,800,000	Metsu cost based on the same design as existing machine with modern controls
Installation / Erection (Equipment Manufacturer)	\$5,000,000	Included above	\$8,000,000				\$9,800,000				Based on Metsu estimate of 70% of Equipment Cost
Installed Equipment / Systems Subtotal											
MANUFACTURER'S BUDGETARY CAPITAL COST (2007)	\$16,000,000	\$13,169,000	\$24,000,000				\$23,800,000			\$32,800,000	
Installation / Erection (Erection Contractor)											
LEAST BUDGETARY CAPITAL COST FOR ALL COAL YARD WORK (2007)											
TOTAL INSTALLED CAPITAL COST (2007)											

LOWEST BUDGETARY CAPITAL COST FOR ALL COAL YARD UPGRADE WORK (2007 DOLLARS)	\$25,613,785
ELECTRICAL & CONTROLS COST ESTIMATE FOR COAL YARD UPGRADE WORK (2007 DOLLARS)	\$1,615,000
LOWEST TOTAL BUDGETARY CAPITAL COST FOR ALL COAL YARD UPGRADE WORK (2007 DOLLARS)	\$27,228,785

HIGHEST BUDGETARY CAPITAL COST FOR ALL COAL YARD UPGRADE WORK (2007 DOLLARS)	\$59,350,000
ELECTRICAL & CONTROLS COST ESTIMATE FOR COAL YARD UPGRADE WORK (2007 DOLLARS)	\$1,615,000
HIGHEST TOTAL BUDGETARY CAPITAL COST FOR ALL COAL YARD UPGRADE WORK (2007 DOLLARS)	\$60,965,000

RECOMMENDED BUDGETARY CAPITAL COST FOR ALL COAL YARD UPGRADE WORK (2007 DOLLARS)	\$39,800,000
ELECTRICAL & CONTROLS COST ESTIMATE FOR COAL YARD UPGRADE WORK (2007 DOLLARS)	\$1,615,000
RECOMMENDED TOTAL BUDGETARY CAPITAL COST FOR ALL COAL YARD UPGRADE WORK (2007 DOLLARS)	\$41,415,000




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ATTACHMENT B

PHASE 11 CAPITAL COST COMPARISON SUMMARY SPREADSHEET

	Electrical / Controls Item	Material Cost	Estimated Installation Hours
1	Furnish 2300 ft 3/C 5kV 500 kcm Cable	\$69,000	345
2	Terminations (6)	\$1,000	50
3	Conduit (2300 ft)	\$69,000	2300
4	Pull boxes	\$4,000	80
5	Install 12 VFDs with motors (remove old ones)	\$175,290	120
6	Install DCS (4 Cabinets, 1 operating station)	\$275,000	100
7	Demolish / Remove Existing Control Panel		100
8	Provide / Install Marshalling Cabinets (4, 650 I/O)	\$10,000	40
9	Provide / Install F.O. Cable for I/O Cabinets	\$1,500	750
10	Provide / Install F.O. Cable from DCS to Main DCS	\$12,000	200
11	Splices		60
12	Conduit drops (200 ft)	\$1,000	60
13	Supply / Install Misc Instruments (qty 24)	\$48,000	500
14	Supply / Install Ultrasonic Level Transmitters (6)	\$21,270	1200
15	Wire up 30 Instruments		
16	3/4" conduit (250 ft avg) (8000 ft)	\$24,000	3600
17	Wire (stp) (9000 ft)	\$3,600	360
18	Terminations (186)	\$200	100
19	Replace Fire Panel	\$112,000	200
20	Total (1 thru 19)	\$826,860	10165
21	Misc., Grounding, etc. (5% of 1 thru 19Total)	\$41,343	508
22	Subtotal Materials	\$868,203	
23	Subtotal Labor MH		10673
24	Subtotal Labor (Assumed Labor Rate \$70.00)		\$747,128
25	Estimated Materials and Labor Cost	\$868,203	\$747,128
26	Total Estimated Installed Cost	\$1,615,331	

 Washington Group International	Big Bend Coal Yard Equipment Upgrade Demolition and Removal Work	Project No.: 28975-001 Specification No.: 15-6-750M Revision: B
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ATTACHMENT C

DEMOLITION WORK MINISPEC AND RFQ



TAMPA ELECTRIC COMPANY

BIG BEND POWER STATION

PROJECT NUMBER 28975-001

COAL FIELD STUDY – PHASE II

DEMOLITION AND REMOVAL WORK MINISPEC

Specification No. 15-6-750M


Prepared for



Washington Group International, Inc.
Building 510 Carnegie Center
Princeton, New Jersey 08540-5287

Revision B

Status: Budgetary Pricing Issue

 Washington Group International	Big Bend Coal Yard Equipment Upgrade Demolition and Removal Work	Project No.: 28975-001 Specification No.: 15-6-750M Revision: B
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DEMOLITION WORK MINISPEC AND RFQ

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1.2	Codes and Standards	27
1.3	Contractor Documentation.....	29
1.4	Quality Assurance and Quality Control.....	29

ATTACHMENTS

Attachment A Bidding Drawings

<u>Drawing Number</u>	<u>Title</u>
11473-1241-85C	Dravo Barge Unloader General Arrangement drawing
11473-FM-3F-1	Dravo Barge Unloader and Dock Plan
11473-FM-3B-5	Bucket Wheel Stacker Reclaimer and Yard Conveyor Arrangement Drawing
11473-1241-176	Bucket Wheel Stacker Reclaimer General Arrangement Drawing
19132-99 Sheet 1	North Stacker General Arrangement and Machinery Chart
19132-99 Sheets 2-5	North Stacker Machinery List

Attachment B Form 2300-1, Contractor Documentation Submittal Requirements (To Follow)



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1.5 Scope of Work

GENERAL

This specification covers the requirements for the complete disassembly, dismantling, removal and protection from damage of all structures and all mechanical, electrical and control equipment, subsystems and components for the following equipment at Tampa Electric's Big Bend Station.

- The 4000 TPH Capacity Continuous Bucket Unloader
- The 4000 TPH Capacity North Stacker
- The 4000 TPH Capacity South Stacker-Reclaimer

BUDGETARY PRICING REQUEST

The Contractor shall submit budgetary quotations to +/- 15% accuracy for each of the following:

- Demolition, dismantling, disassembly and removal of The Continuous Bucket Unloader in accordance with the detailed requirements further defined herein.
- Demolition, dismantling, disassembly and removal of The North Stacker in accordance with the detailed requirements further defined herein.
- Demolition, dismantling, disassembly and removal of The South Stacker-Reclaimer in accordance with the detailed requirements further defined herein.

1.6 Work by Contractor

The Contractor shall be responsible for careful disassembly, removal and protection from damage, of the existing Continuous Bucket Unloader, the Coal Yard North Stacker and the Coal yard South Stacker-Reclaimer equipment and materials.

The Contractor shall coordinate access to the demolition site, available staging and lay-down areas, and sequence of demolition / disassembly with the Owner's designated representative.

The Contractor shall remove all dismantled, resaleable equipment and materials from the work location to an area designated by The Owner's designated representative.

The Owner's designated representative shall reserve the right to review and assess salvageability and resale value of all demolished materials prior to Contractor's ultimate / final disposal from the site.



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The Contractor shall coordinate all removal activities with the Owner's designated representative. The Contractor shall develop and provide the Owner with a schedule which demonstrates that the demolition and removal staging activities will not result in any interference with coal receiving, unloading, stockout, reclaim or transfer to the plant silos.

Power and utilities to equipment to be removed shall be disengaged and tagged-out by the Owner before commencement of any demolition or removal work. The Contractor shall furnish all equipment, tools, rigging and lifting equipment including cranes, hoists, air pallets, vehicles, and transporters, all consumables, facilities, and all supervision, technical advisors, craft labor, materials and services complete as specified herein.

All rigging equipment shall be furnished by the Contractor and shall be tested prior to actual use in accordance with applicable ANSI and OSHA requirements. Contractor's lifts over 25 tons shall be designed by an engineer licensed in the state of Florida and submitted for review to the Owner's designated representative.

The Contractor shall be responsible for all engineering calculations related to the selection of lifting and rigging equipment, design of temporary steel, design and arrangement of scaffolding, design of temporary attachments to existing plant components, and design of miscellaneous steel used for rigging. All such calculations shall be sealed by a Professional Engineer registered in the State of Pennsylvania and shall be subject to review by the Owner's designated representative.

All scaffolding shall be furnished by the Contractor and shall be designed, erected, and used in accordance with the requirements of the Occupational Safety and Health Administration (OSHA).

All cranes/lifting devices shall be furnished by the Contractor and shall be inspected daily by Contractor's and Owner's designated representative's Safety Representatives prior to being put in service. Any crane/lifting device not found to be in a safe condition shall be marked and removed from the site. A ring crane was utilized to erect the Dravo barge unloader. If a ring crane is required to dismantle the barge unloader it shall be furnished by the Contractor.

The Contractor shall provide and place all crane mats required to complete the work.. The Contractor shall submit for the Owner's review the detailed hoisting and rigging procedures that he plans to implement in the execution of the work.



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DEMOLITION WORK MINISPEC AND RFQ

The Contractor shall complete and submit a "Lifting Permit" to the Owner's designated representative for lifts over 25 tons net hook load. No lift shall start without Owner's designated representative's prior review of Contractor's Lifting Permit.

The Contractor will be provided with 480 volt power in the vicinity of each work area. It shall be the Contractor's responsibility to step down this power source and provide the cabling as required to extend power from these distribution centers to each point of use. The Contractor shall identify their specific power requirements in each area prior to mobilization.

The Contractor shall furnish all required office / change trailers, tools, office supplies, communications, consumables, sanitary facilities, on-site waste disposal to containers provided by the Owner. The Contractor shall identify the specific space requirements prior to mobilization.

The Contractor shall provide protective enclosures and administrative personnel required for warehousing all Contractor-furnished materials. Contractor shall place dismantled structures and components in location(s) designated by the Owner's designated representative and shall provide a storage / warehousing plan for all dismantled structures, equipment and materials.

At the commencement of the work, the Contractor shall clean and prepare all work areas of any dust, debris, or other material that will interfere with the work or potentially damage new or existing equipment.

A daily cleanup of demolition debris shall be performed by the Contractor. If the Contractor fails to keep its work areas cleaned on a daily basis, the Owner's designated representative will take actions necessary to clean the areas and the backcharge will be deducted from payment to the Contractor for all costs incurred. Trash shall be placed only in dumpsters provided by the Contractor. Off-site disposal of dismantled structures, equipment, components and materials will be by the Owner.

The Contractor shall exercise deliberate care to safeguard all existing facilities and installations, including buildings, roads, equipment, structural steel, piping, electrical trays, conduits and other components during demolition activities. The Contractor shall repair any damage caused by the Contractor incurred during the execution of the work and restore the damaged component to its original condition at the direction of the Owner's designated representative. In default of the Contractor repairing any damage or



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DEMOLITION WORK MINISPEC AND RFQ

restoring to the original condition in a timely manner, the Owner may arrange for the repair of damage and the cost of such repair shall be backcharged by deducting from payments due to the Contractor.

The Contractor shall maintain, and submit documentation related to the work, including as a minimum: project schedules, code forms and reports, and waste disposal records.

The Contractor shall provide telephone equipment and service for all jobsite offices and shall assume all responsibility for site telephone service costs.

The Contractor shall provide drinking water, containers, ice and cups.

The Contractor shall provide janitorial services for Contractor's trailers and work area.

The Contractor shall provide first aid facilities, equipment, and consumables.

Only the Contractor's company vehicles, as approved by the Owner's designated representative, will be allowed onsite.

The Contractor shall provide temporary sanitary facilities, including associated janitorial services and storage and removal of sewage. Contractor shall provide for and enforce the use of acceptable sanitary facilities for all of their facilities as well as those of its Subcontractors, construction workers and field representatives at the site. Portable toilets shall be of the chemically treated type obscured from public view and properly maintained. Sanitary facilities in trailers and other temporary structures shall be equipped with holding tanks or shall temporarily be connected to the permanent sewer system at a location provided by the Owner's designated representative.

The Contractor shall comply with the requirements of the national, state, local and Tampa Electric Company construction and plant site safety codes, policies and procedures. The Contractor shall submit a Safety Plan for Owner's review that defines procedures and training to be employed to ensure the safe completion of all phases of the work.

The Contractor shall designate a qualified Safety Representative subject to acceptance by the Owner's Designated representative.

The Contractor's Safety Representative shall be responsible for administering the safety program, ensuring that site safety requirements and procedures are met, conducting safety inspections of the work being performed, conducting weekly safety meetings with craft



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employees, administering all first-aid needs for Contractor's employees, providing safety training for Contractors, meeting with OSHA inspectors, and submitting a weekly report to the Owner's designated representative's safety engineer documenting all safety activities.

The Owner's designated representative will immediately notify Contractor of any observed safety violations, and Contractor shall, upon receipt of said notification, immediately correct the violation. If Contractor fails to correct the infraction, the Owner's designated representative shall have the right to stop Contractor's work at any time until the safety violation is corrected. The expense of any such Work stoppage and resultant standby time shall be to the Contractor's account.

The Contractor's personnel and any suppliers' personnel or other visitors shall attend a two (2) hour safety orientation prior to commencing work on the site. Attendance at the safety training may be subject to review and audit by the Owner's designated representative; the Contractor's Safety representative shall be responsible for maintaining accurate training records.

The Contractor shall organize and conduct daily gang box safety meetings to be attended by all of Contractor's craft employees for discussion of safety issues occurring during the course of the work.

The Contractor shall initiate and maintain such permits and programs as may be necessary to comply with requirements set forth by the Occupational Safety and Health Administration (OSHA) and any other local, state and federal regulations. Copies of all permits that are required by the Contractor shall be provided to Owner's designated representative prior to commencement of work at the jobsite. If OSHA permits are not required to perform work, a letter shall be submitted to Owner's designated representative prior to commencement of work at the jobsite stating that such permits are not required.

The Contractor's scaffolding and ladders shall be inspected by the Contractor prior to use. The Owner's designated representative shall also be given the opportunity to inspect scaffold prior to use. Subsequent to the initial inspection, the Contractor's Safety Representative shall inspect scaffolding and ladders on a daily basis (at a minimum). A tag system shall be used for all scaffolding and ladders to ensure that defective scaffolds and ladders are removed from service. No one will be permitted to use the scaffolding before it is tagged as "approved," or after it has been tagged for removal.



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The Contractor shall be responsible for ensuring that all personnel working on site are equipped with and use approved personnel protective equipment required to perform the work, including but not limited to hard hats, steel toed work shoes or work boots, safety glasses, ear plugs, face shields, gloves, and fall protection.

The Contractor shall comply with applicable hazardous substance disclosure requirements. The use of asbestos or asbestos-containing materials is prohibited. Materials containing lead, mercury, or PCBs will not be allowed. The Contractor shall implement all necessary safety and handling procedures in the removal and disposal of the Dravo unloader counterweight blocks which are encased in lead.

The Contractor shall have in place a fire prevention and protection program for the work, including training of its personnel in fire safety, in accordance with the Owner's and Contractor's safety programs.

Storage of flammable materials such as fuels, paints, solvents, cleaning fluids, shall be provided in separate building(s) expressly for this purpose. The building(s) shall be provided by the Contractor and shall be equipped with proper fire extinguishers located in accordance with the applicable codes.

Temporary facilities and stored materials shall be removed by the Contractor within thirty (30) days after the work is completed.

The Contractor shall provide all necessary temporary lighting, wiring, panel boards, switches and other temporary electrical devices. The temporary electrical system shall include sufficient outlets so that a 100-foot long extension cord will reach all operations requiring light or power, and shall include proper overcurrent protection for all conductors. These requirements shall also be applicable to Contractor's offices, as well as other Contractor construction facilities.

The Contractor shall attend a meeting at a time and place selected by the Owner to discuss matters relative to the execution of this Contract. The Contractor shall attend additional project review meetings as required by the Owner thereafter to expedite the work.

The Contractor shall maintain an adequate Project management staff to meet all of its contract obligations, including responsibility for providing and maintaining sufficient equipment to properly execute the demolition, dismantling and removal activities.



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DEMOLITION WORK MINISPEC AND RFQ

The Contractor shall keep at the jobsite, during the progress of the work, a competent project superintendent and necessary competent assistants. The Owner's designated representative will retain the right of approval of all site supervisory staff. The Contractor shall not remove approved key personnel from the project without prior written approval from the Owner's designated representative.

The Contractor shall provide at least one (1) full time superintendent at the jobsite during normal working hours. In addition, supervisors and foremen shall be provided at all times to appropriately supervise the work in progress.

The Contractor shall attend coordination meetings at the jobsite with the Owner and Owner's designated representative on a minimum weekly basis. The personnel designated by the Contractor to attend the meeting shall have the authority to make decisions and commit the Contractor to solutions agreed upon during the coordination meetings.

Upon completion of the work, the Contractor shall promptly return unused materials furnished by Owner's designated representative and remove from Owner's premises all of Contractor's equipment, temporary facilities, materials, and like items, leaving Owner's premises and the vicinity clean, safe and ready for use.

1.7 Equipment and Services to be Furnished by the Owner

Dismantled structures and equipment storage areas based on Contractor's requirements, as reviewed and agreed to by the Owner's designated representative.

Unsecured parking facilities for Contractor's personnel. The Owner will not be financially responsible for any damage or unlawful acts to any Contractor equipment or private vehicles parked in the designated Contractor parking areas.

Supply and installation of 480 V power at a single point based on Contractor's requirements, as reviewed and agreed to by Owner's designated representative.

Lock-out/Tag-out of energized / operable equipment.

Relocation of existing below grade and above grade utilities, structures or components posing difficulties or interference with Contractor's ability to demolish, dismantle and remove existing structures and equipment.

1.8 Codes and Standards

The work shall be performed in accordance with all applicable laws and regulations of the federal government, the State of Florida, and with applicable local codes and ordinances. The Contractor shall comply with the latest addendum in effect at the time of



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DEMOLITION WORK MINISPEC AND RFQ

purchase. A summary of the codes and industry standards to be used is identified, but not necessarily limited to those listed below:

- American Institute of Steel Construction (AISC)
- American Iron and Steel Institute (AISI)
- American National Standards Institute (ANSI)
- American Petroleum Institute (API)
- American Society of Civil Engineers (ASCE)
- American Society Mechanical Engineers (ASME)
- American Society of Testing and Materials (ASTM)
- American Water Works Association (AWWA)
- American Welding Society (AWS)
- Building Officials and Code Administration (BOCA)
- Conveyor Equipment Manufacturers association (CEMA)
- Code of Federal Regulations (CFR)
- Factory Mutual (FM)
- Hydraulic Institute Standards (HI)
- Illuminating Engineering Society (IES)
- Institute of Electrical & Electronic Engineers (IEEE)
- Instrumentation, Systems and Automation Society (ISA)
- Manufacturers Standardization Society (MSS)
- International Building Code (IBC)
- Occupational Safety and Health Administration (OSHA)
- National Association of Corrosion Engineers (NACE)
- National Electrical Manufacturers Association (NEMA)
- National Electric Code (NEC)
- National Electrical Safety Code (NESC)
- National Electrical manufacturers Association (NEMA)
- National Fire Protection Association (NFPA)



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- Occupational Safety and Health Administration (OSHA)
- Pipe Fabrication Institute (PFI)
- Underwriters Laboratory (UL)
- Uniform Building Code and all Applicable local Building Codes (UBC)
- The Society for Protective Coatings (SSPC)

In the event of any apparent conflict between the applicable codes and standards and this specification, the Contractor shall refer the conflict to the Owner's designated representative for written resolution.

1.9 Contractor Documentation

The drawing and data requirements are addressed in the Subcontract documents. The documents required and submittal schedule are identified in "Form 2300-1, Documentation Submittal Requirements" which is included as Attachment B (*To follow*).

1.10 Quality Assurance and Quality Control

Quality Assurance requirements shall be in accordance with the provisions of the subcontract documents and as specified in this specification. The Contractor is directly responsible for the quality of the Work. The Contractor shall provide a Quality Program or System, which is structured so that all aspects of quality are defined and verified for all items within Contractor's scope.

Field quality assurance and quality control procedures shall be submitted to the Owner's designated representative for review before work commences.

The Contractor shall submit resumes and qualifications for the proposed quality control staff to the Owner for review.



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ATTACHMENT D

DEMOLITION WORK BUDGETARY PROPOSALS

Cleveland Wrecking Company

4990 Highway 22, Suite E
Mandeville, LA 70471
Phone: (985) 845-9503
Fax: (985) 845-9518

August 6, 2007

Washington Group International, Inc.

Building 510 Carnegie Center

Princeton, New Jersey 08540-5287

Re: Tampa Electric Company

Big Bend Power Station

Project Number 28975-001

Coal Field Study – Phase II

Demolition & Removal Spec. 15-6-750M

Attn: Mr. Jim Kelly

Dear Mr. Kelly,

Cleveland Wrecking Company is pleased to submit its Budget Estimate for the Phased Demolition for the above referenced project. Our proposal is based on the attached Clarifications and Conditions.

Lump Sum Budget Estimate

1) Coal Unloader.....	\$ 1,200,000.00
2) North Stacker.....	\$ 200,000.00
3) South Stacker Reclaimer.....	\$ 200,000.00

Thank you for the opportunity to work with you on this estimate. We look forward to bidding this project once budget is approved. If you have any questions please do not hesitate to call.

Sincerely,

Chris Schillesci

Project Manager

Cleveland Wrecking Company

Page 2 of 2

August 6, 2007

WGI/TECO Big Bend

Clarifications and Conditions

Cleveland Wrecking Company (CWC) has developed its budget estimate based on the following;

1. Work will be performed in 2 phases
 - Coal Unloader and one Stacker



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DEMOLITION WORK BUDGETARY PROPOSALS

- Stacker/Reclaimer
- 2. WGI will remove 400' of conveyor, rollers and conveyor structure from below Stacker and Stacker Reclaimer.
- 3. Scrap Credit has been applied to cost. Price is net cost to TECO.
- 4. All scrap is to the account of CWC
- 5. Price developed based on information provided. Lack of weights or detail drawings may have inflated pricing.
- 6. Price is plus or minus 20%
- 7. Estimate assumes all material and equipment is scrap.
- 8. Salvage of specific items for TECO will be quoted per item
- 9. Asbestos survey is excluded
- 10. Asbestos abatement is excluded
- 11. Handling of PCB's and other hazardous materials are excluded
- 12. All permits are excluded
- 13. Use of explosives will be allowed by TECO to fell Stacker & Stacker/Reclaimer
- 14. Adequate access to work will be provided including water access for unloader



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DEMOLITION WORK BUDGETARY PROPOSALS

Florida Wrecking and Salvage
8814 Honeywell Road
Gibsonton, Florida 33534
813-741-0405 Office
813-741-0415 Fax
flwrecking@verizon.net

TO: Jim Kelly

FROM: Terry McNabb

DATE: 8/9/07

Fax: 609-720-2384

Message: Demolition proposal for TECO Poject #28975-001
Thanks
Terry McNabb

Pages: 2



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DEMOLITION WORK BUDGETARY PROPOSALS

Florida **W**recking and **S**alvage

To: Jim Kelly
Company: Washington Group, International
Phone: 609-720-3604
Fax: 609-720-2384
Project: Tampa electric Company big Bend Power Station Project Number 28975-001

Date: 8/9/07

Scope of Work: Demolish and remove per drawings and specs; Dravo Barge Unloader, Bucket Wheel Stacker Reclaimer and yard conveyor, North stacker and all associated equipment

Exclusions:

Hazardous Material Removal
Barricades or temporary partitions
Asbestos or lead survey
Utility locating, capping, protection, repairing

Site work
Patching or trim work

Base Bid Price: \$982,285.00

Payment Terms: To be determined

I agree to the above terms and authorize the described work.

X _____

All salvage belongs to Florida Wrecking and Salvage

**8814 Honeywell Rd. Gibsonton, Fl 33534(Phone) 813-741-0405(Fax)813-741-0415
E-Mail: Flwrecking@verizon.net**



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DEMOLITION WORK BUDGETARY PROPOSALS

CCC Group, Inc.

INDUSTRIAL CONSTRUCTION / FLORIDA DIVISION

Office: (863) 533-1494 / Fax: (863) 533-1906 2651 B HWY. 60 West Bartow, FL 33830
E-Mail: Florida@cccgrouppinc.com

August 20, 2013

Quote # 203-0707

ATTN: James Kelly
Washington Group International
Building 510 Carnegie Center
Princeton, NJ 08540-5287

Regarding: Demolition and Removal Work at Big Bend Power Station. Spec. # 15-6-750M

CCC Group, Inc is pleased to have the opportunity to provide for your consideration the following quote.

Scope of Work:

- Disassembly, dismantling, removal and protection from damage all components of the Continuous Bucket Unloader, North Stacker, South Stacker- Reclaimer in accordance with required scope.
- Labor and equipment for above project supplied by CCC GROUP INC.
- Designated lay down area to be provided by Owner.
- Work based on 50 hour work weeks.
- Price is for budgetary purposes only.

Total Budget price **\$3,694,000.00**

CCC Group Inc. will provide all the necessary manpower to properly complete the above scope in accordance with WGI standards.

The pricing noted is inclusive of sales taxes on materials and equipment. Any remaining taxes that may apply remain the responsibility of WGI.

Any extra work required will be completed and billed on a T & M basis. An approved change order must be signed prior to any extra work being performed.



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DEMOLITION WORK BUDGETARY PROPOSALS

Quoted prices are firm for 30 days. Upon acceptance, please reference the above quote number.
Please feel free to contact us if you have any questions.

Thank you,

John Matejek
Regional Manager

Scottie Denning
Manager Industrial Mining Operations



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Coal Field Study - Phase II Report

ATTACHMENT D

DEMOLITION WORK BUDGETARY PROPOSALS

July 31, 2007

Washington Group International Inc.
510 Carnegie Center
Princeton, NJ 08543

Attn: Jim Kelly

RE: TECO Big Bend Coal Yard Demolition Budgetary Pricing

Dear Mr. Kelly:

Louisiana Chemical Dismantling Co., Inc. (LCDC) is pleased to submit a budget proposal on the above referenced project. Our price is in accordance with the plans, specifications and includes all cost for labor, materials, equipment, supervision and insurance (\$ 10 million general liability).

PRICING:

Continuous Bucket Unloader \$1,350,000.00
North Stacker\$350,000.00
South Stacker-Reclaimer.....\$350,000.00

CLARIFICATIONS:

- Torch work can be utilized in all areas.
- Explosives will be utilized in the removal of the North Stacker and South Stacker-Reclaimer.
- TECO to remove any oils, asbestos containing or hazardous materials.
- All items to be removed as and are to be considered scrap.

Louisiana Chemical Dismantling Co., Inc. appreciates the opportunity to submit this proposal. I am confident that with our experience and expertise that this project will be completed safely and on schedule.

Should you have any questions or need additional information please do not hesitate to contact me at (504)-464- 0770.

Sincerely

Louisiana Chemical Dismantling Co. Inc.

The Invirex Group

Jay A Schwall

Jay A Schwall

President

Louisiana Chemical Dismantling Co., Inc.

#24 27th Street, Kenner, LA 70062



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ATTACHMENT D

DEMOLITION WORK BUDGETARY PROPOSALS



TAMPA ELECTRIC COMPANY

BIG BEND POWER STATION

PROJECT NUMBER 28975-001

COAL FIELD STUDY – PHASE II

CONTINUOUS BARGE UNLOADER MINISPEC


Specification No. 15-6-703M

Prepared for



August 2007

Washington Group International, Inc.
Building 510 Carnegie Center
Princeton, New Jersey 08540-5287

 Washington Group International	Big Bend Coal Yard Equipment Upgrade Continuous BargeUnloader	Project No.: 28975-001 Specification No.: 15-6-703M Revision: B
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<u>Drawing Number</u>	<u>Title</u>
11473-1241-85C	Dravo Barge Unloader General Arrangement Drawing
11473-FM-3F-1	Dravo Barge Unloader and Dock Plan
P97644	Ocean Going Coal Barges Data Sheet
7220-11	Ocean Going Coal Barges Data Sheet
Photographs	DRAVO Barge Unloader



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ATTACHMENT E

CONTINUOUS BARGE UNLOADER MINISPEC AND RFQ

1.0 Scope of Work

General

This specification and its attachments cover the design, engineering, furnishing, fabrication, delivery, unloading, storage, protection, removal from storage, erection, installation, testing, commissioning and placing into successful operation the Continuous Barge Unloader equipment, facilities and structures specified herein at Tampa Electric Company's Big Bend Station.

It is not Tampa Electric's intent to specify all technical requirements, nor to set forth those requirements covered by applicable codes and standards. The Contractor's product shall meet the requirements of this Specification and the applicable industry standards.

The Continuous Barge Unloader (CBU) will have a free digging rate capacity of 4,000 TPH and will replace the existing 4,000 TPH capacity DRAVO Continuous Barge Unloader which will be dismantled and removed after erection, installation and commissioning of the new machine.

BUDGETARY PRICING REQUEST

The Contractor shall submit budgetary quotations to +/- 15% accuracy for each of the following:

- Design, engineer, fabricate, furnish and deliver one (1) 4,000 TPH free digging rate capacity traversing Continuous Barge Unloader (CBU) in accordance with the detailed requirements further defined herein.
- Unload, store, protect, remove from storage, install erect, commission and turnover one (1) 4,000 TPH free digging rate capacity traversing Continuous Barge Unloader (CBU) in accordance with the detailed requirements further defined herein.

1.1 Work by Contractor

A. Equipment

The Contractor shall furnish and erect one (1) complete machine to include, but not be limited to, the following:

1. One (1) hinged-single bucket ladder with heavy duty welded plate girder steel ladder frame, double strand bucket



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ATTACHMENT E

CONTINUOUS BARGE UNLOADER MINISPEC AND RFQ

chains, chain guides, buckets, drive assembly, drive and return sprockets and shafting, holdback, braking system, bucket ladder hoisting system, bucket ladder maintenance monorail, safety switches and all other necessary appurtenances and miscellaneous items.

2. One (1) boom gathering conveyor complete with conveyor support frame, stringers, legs/bents, belting, pulleys,
3. One (1) surge hopper transfer conveyor complete with conveyor support frame, stringers, legs/bents, belting, pulleys, drive equipment, shafting, pillow block bearings, idlers, take-up, belt cleaners, guards, emergency pull cord switches, misalignment and zero speed switches and all other necessary appurtenances and miscellaneous items.
4. One (1) 150 ton capacity traveling surge hopper, hopper, 4,000 TPH capacity discharge belt feeder and all required supporting structure and travel trucks, chutework, belting, pulleys, drive equipment, shafting, pillow block bearings, idlers, belt cleaners, guards, emergency pull cord switches, misalignment and zero speed switches and all other necessary appurtenances and miscellaneous items.
5. One (1) bucket ladder traversing carriage assembly including motorized bridge girder frame type traversing carriage complete with carriage drive, speed reducer(s), drive shaft(s) with flexible couplings, carriage brake(s), carriage support trucks, festoon cable, carriage runway stops, bumpers, travel limit switches and all necessary appurtenances and miscellaneous items.
6. The unloader tower shall be supported from the rails by four (4) travel truck assemblies, one (1) at each corner of the tower. Each truck shall comprise eight (8) wheels, five (5) of which shall be motor driven. The drive train for each pair of driven truck wheels shall consist of the drive motor, worm reducer gear and a train of spur gears. The drive system shall provide a traversing speed range for the unloader tower of 2 fpm to 100 fpm.
7. Chutework, housings, skirtboards, curtains and closures as necessary to make the Continuous Barge Unloader a complete system.



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CONTINUOUS BARGE UNLOADER MINISPEC AND RFQ

8. A fog type dust suppression system to provide dust control at each loading and transfer point.
9. Automatic rail clamps.
10. Hurricane tie-downs.
11. Anemometer, annunciator, and alarms.
12. Latch hook to support the cantilever when the unloader is not operating.
13. Adequate access to all equipment, including stairs, ladders, walkways, platforms, and handrails.
14. Instrument installation materials including instrument tubing, piping, air distribution piping and heat tracing.
15. Shop prime and finish painting of equipment and structural steel, as defined herein.
16. Provide power, control and instrumentation requirements, including all required CBU equipment control logic. The platform mounted control room shall be furnished with a Programmable Logic Controller (PLC) through which all barge unloading functions will be initiated and performed. The barge unloading PLC will interface with the plant DCS to permit the status of unloading activities/functions to be displayed in the coal handling system control room.
17. Operator's control cab shall be ergonomically designed with wraparound windows, suitable illumination, heating, and air-conditioning systems
18. All applicable design loads or forces required to enable the concrete work and structural steel to be designed by Owner's Engineer, equipment arrangement and platform requirements including O&M access space, control system operating procedures, logics, motor lists, motor and electrical equipment outline drawing, motor data sheets, mechanical equipment list, piping line, electrical interconnecting diagrams and schematic diagrams list, piping terminal points and connection types, instrument list, and all other engineering and design data required to interface with the balance of the plant.



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CONTINUOUS BARGE UNLOADER MINISPEC AND RFQ

19. Training of Owner's operating staff.
20. One set of any special operating and maintenance tools and devices as required.
21. All special test equipment required for installation, operation and maintenance of the equipment.
22. Spare parts required during installation and start-up.
23. Weld procedures and procedure qualifications, welder qualifications; weld acceptance criteria and NDE procedures.
24. Certified Material Test Reports (CMTR) of physical/chemical properties for all structural steel materials.
25. Electrical grounding connections, between Contractors furnished equipment and Contractor furnished structures.
26. The Contractor's proposal shall include:
 - i. I/O counts for the following categories of signals:
 - Analog inputs.
 - Analog outputs.
 - Digital inputs.
 - Digital outputs.
 - ii. Connected HP and BHP for all equipment.

B. Services

The Contractor shall furnish a completely erected installation, on Tampa Electric's foundations for the structures, equipment, and accessories to be furnished by the Contractor. Services performed by the Contractor shall include, but shall not be limited to, the following:

Erection and installation labor

Labor supervision

Receiving, unloading, sorting, and hauling of the material and equipment from delivery point to storage area and from storage area to point of erection. The Contractor shall assume all responsibility for care and protection from unloading through erection. The



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CONTINUOUS BARGE UNLOADER MINISPEC AND RFQ

Contractor shall be responsible for demurrage charges for equipment and materials unloaded and stored by him.

Receipt of all shipments at the jobsite, specifically including a determination that equipment is complete in accordance with the shipping list and that each component is undamaged. The Contractor shall promptly unload all equipment received at the jobsite. Unloading shall be conducted utilizing proper supervision and unloading equipment and observing all handling instructions indicated on the shipping containers.

Unload and store all tools and spare parts furnished with the equipment. Any tools furnished with the equipment and used for erection purposes shall be cleaned and reconditioned before being returned to Tampa Electric.

27. Weather protection, including temporary heat, if required for protection of equipment in storage, or erected, and also as required for the proper continuance of erection, until the installation is accepted by Tampa Electric for operation.

Furnish any temporary buildings or structures required for the Contractor's work including office change house, sanitary, storage, all interior partitions, shelves, bins, blueprint racks, file cabinets, office furniture, telephone, and any HVAC as may be required by the Contractor.

All materials, equipment, tools, etc., used by the Contractor for the installation of the equipment shall be cleared through Tampa Electric's receiving warehouse both on entrance to and egress from the project site.

Labor for start-up inspection and miscellaneous start-up work during preliminary operation.

Labor for final alignment of equipment and testing training of loaded belts while handling coal, and testing of coal handling equipment.

The Contractor shall furnish all cranes, rigging, erection scaffolding, trucks, and derricks, including maintenance and fuel.

All rigging equipment shall be furnished by the Contractor and shall be tested prior to actual use in accordance with applicable ANSI and OSHA requirements. Contractor's lifts over 25 tons shall be designed by an engineer licensed in the state of Florida and submitted for review to Tampa Electric's designated representative.

The Contractor shall be responsible for all engineering calculations related to the selection of lifting and rigging equipment, design of temporary steel, design and arrangement of scaffolding, design of temporary attachments to existing plant



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CONTINUOUS BARGE UNLOADER MINISPEC AND RFQ

components, and design of miscellaneous steel used for rigging. All such calculations shall be sealed by a Professional Engineer registered in the State of Pennsylvania and shall be subject to review by Tampa Electric's designated representative.

All required construction scaffolding, temporary stairs, floors, ladders, platforms and railings shall be furnished by the Contractor and shall be designed, erected, and used in accordance with the requirements of the Occupational Safety and Health Administration (OSHA).

All cranes/lifting devices, heavy rigging, including hoisting engines, cable, and cable blocks shall be furnished by the Contractor and shall be inspected daily by Contractor's and Owner's designated Safety Representatives prior to being put in service. Any crane/lifting device not found to be in a safe condition shall be marked and removed from the site. If a ring crane is required to erect the machines it shall be furnished by the Contractor.

All light rigging such as air hoists, rope, rope blocks, and chain hoists shall be furnished by the Contractor.

28. The Contractor shall provide and place all crane mats required to complete the work..

The Contractor shall submit for Tampa Electric's review the detailed hoisting and rigging procedures that he plans to implement in the execution of the work.

The Contractor shall complete and submit a "Lifting Permit" to Tampa Electric's designated representative for lifts over 25 tons net hook load. No lift shall start without Owner's designated representative's prior review of Contractor's Lifting Permit.

The Contractor will be provided with 480 volt power in the vicinity of each work area. It shall be the Contractor's responsibility to step down this power source and provide the cabling as required to extend power from these distribution centers to each point of use. The Contractor shall identify their specific power requirements in each area prior to mobilization.

Work by Owner

- A. The following materials and services will be provided by Tampa Electric:

1. All required civil work, grubbing, clearing, excavation and backfill.



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CONTINUOUS BARGE UNLOADER MINISPEC AND RFQ

2. Inspection and verification of adequacy of all foundations and concrete slabs for support of structures and equipment, including furnishing of all anchor bolts, embedded plates or items to meet the Contractor's requirements.
3. All wiring external to the equipment.
4. 4160 volt switchgear for large motors.
5. Electrical grounding connections between Contractor furnished equipment and structures and the plant's grounding grid.

1.2 Codes and Standards

All Continuous Barge Unloader equipment and appurtenances shall be manufactured in accordance with the following Codes and Standards, including all amendments in effect at time of Purchase Order placement.

These codes and standards set forth-minimum requirements necessary to assure satisfactory performance of the Contractor's equipment. Other internationally recognized codes and standards will be acceptable provided they meet or exceed the requirements of the listed codes and standards. If different from list, Contractor shall submit for Owner's approval, details of the codes and standards, which Contractor proposes to use. Contractor shall demonstrate to the satisfaction of Owner that these codes and standards meet or exceed the requirements of the codes and standard listed.

The equipment shall meet and satisfy all applicable requirements of pertinent federal, state and municipal laws, regulations, codes, standards and ordinances.

In the event of any conflict between standards, codes and this specification, Contractor shall refer the conflict to Tampa Electric's designated representative for written resolution.

The Contractor shall provide a list of codes and standards used for the manufacturer of Contractor's products that are in effect at the time of Purchase Order.

- | | | |
|-------|-------|---|
| 1.2.1 | AFBMA | Anti-Friction Bearing Manufacturers Association |
| 1.2.2 | AGMA | American Gear Manufacturers Association |



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CONTINUOUS BARGE UNLOADER MINISPEC AND RFQ

1.2.3	AISC	American Institute of Steel Construction
1.2.4	AISI	American Iron and Steel Institute
1.2.5	ANSI	American National Standards Institute
1.2.6	API	American Petroleum Institute
1.2.7	ASCE	American Society of Civil Engineers
1.2.8	ASME	American Society of Mechanical Engineers
1.2.9	ASTM	American Society for Testing and Materials
1.2.10	AWS	American Welding Society
1.2.11	BOCA	Building Officials & Code Administration International, Inc.
1.2.12	CEMA	Conveyor Equipment Manufacturers Association
1.2.13	CFR	Code of Federal Regulations
1.2.14	FM	Factory Mutual
1.2.15	HI	Hydraulic Institute Standards
1.2.16	IEEE	Institute of Electrical and Electronics Engineers
1.2.17	IPCEA	Insulated Power Cable Association
1.2.18	ISA	Instrument Society of America
1.2.19	MPTA	Mechanical Power Transmission Association
1.2.20	MSS	Manufacturers Standardization Society
1.2.21	NACE	National Association of Corrosion Engineers
1.2.22	NEC	National Electrical Code
1.2.23	NESC	National Electric Safety Code
1.2.24	NEMA	National Electrical Manufacturers Association
1.2.25	NFPA	National Fire Protection Association
1.2.26	NPTA	National Power Transmission Association
1.2.27	OSHA	Occupational Safety and Health Administration
1.2.28	PFI	Pipe Fabrication Institute



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CONTINUOUS BARGE UNLOADER MINISPEC AND RFQ

- | | | |
|--------|---------|--|
| 1.2.29 | RMA | Rubber Manufacturers Association |
| 1.2.30 | UBC/IBC | Uniform Building Code/International Building Code or
Applicable Local Building Code |
| 1.2.31 | SSPC | The Society for Protective Coatings |
| 1.2.32 | UL | Underwriters Laboratory |
- 1.3 Quality Assurance and Quality Control
- 1.3.1
- 1.3.2 Quality Assurance requirements shall be in accordance with the provisions of the Subcontract documents and as specified in this specification. The Contractor is directly responsible for the quality of the work.
- 1.3.3 The Contractor shall provide a Quality Program or System, which is structured so that all aspects of quality are defined and verified for all items within Contractor's scope.
- 1.3.4 Field quality assurance and quality control procedures shall be submitted to Tampa Electric's designated representative for review before work commences.
- 1.3.5 The Contractor shall submit resumes and qualifications for the proposed quality control staff to Tampa Electric for review.



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ATTACHMENT F

CONTINUOUS BARGE UNLOADER BUDGETARY PROPOSALS

Jim,

Order of magnitude cost for two- 1950-tph grab unloaders is:

\$US 16,000,000, FOB Jobsite (Sixteen Million US Dollars)

Total weight of each machine is 1,300,000-lbs. Attached is the drawing of the machine. This is the same machine that is currently at Big Bend Station.

Budget cost for a continuous barge unloader same as the existing machine but with modern electrics is

\$US 14,000,000, FOB Jobsite (Fourteen Million US Dollars)

Best Regards

Ben Dudek
Principal Engineer
Proposal and Sales Support

Metso Minerals
1500 Corporate Drive, Suite 300
Canonsburg, PA 15317

e-mail: ben.dudek@metso.com
phone: 412-269-5214
fax: 412-269-5161

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ATTACHMENT F

CONTINUOUS BARGE UNLOADER BUDGETARY PROPOSALS

From: Ulrich Pahl [ulrich.pahl@thyssenkrupp.com]
Sent: Friday, September 07, 2007 6:14 PM
To: Kelly, James
Subject: TECO Big Bend Station; Budgetary Prices for (1) CSU; (2) BWSR; WGI #28975-001

Attachments: CSU Reached Site 231105.jpg; CSU final erected.jpg; CIMG6024.jpg; CIMG5685.jpg; WG TECO-SUL.PDF; WG TECO-BWSR.PDF

Dear Mr. Kelly,

In support of Washington Group preparing a Study for TECO to up-grade the Coal Handling System at the Big Bend Station, we are pleased to submit herewith our Budgetary Supply and Erection cost for:

- a.. Continuous Ship Unloaders (CSU), and
- b.. Bucket Wheel Stacker/Reclaimers (BWSR)

Please note that TKRI (ThyssenKrupp Robins, Inc.) has to deviate from the WG Specifications by proposing two (2) CSUs and not only one unit. The reason is the following: The specified unloading capacity of 4,000 tph is interpreted to be the "Normal Capacity" which is typically 10% less than the "Peak Capacity". This is in our past experience of over 30 years a very high unloading rate for a single machine of this kind; in similar cases our clients had opted for splitting this rate between two CSUs, this not only provides redundancy at 50% capacity should one machine be out of service, but also allows simultaneous unloading of a coal carrying ship, cutting the time at the dock significantly.

Both CSUs are proposed on a roll-on / roll-off basis; this would allow TECO to operate its pier with the least interference during construction time: The CSUs would be delivered completely erected (minus the counterweights).

The pier is a very crowded area and for the sake of safety and efficiency TKRI suggests opting for this type of delivery. The coal yard, on the other hand, is a wider area, away from the water; here we suggest using conventional construction methods for the two BWSRs.

For illustration we attached photos and GA drawings:



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CONTINUOUS BARGE UNLOADER BUDGETARY PROPOSALS

- a.. Two completely shop assembled CSUs are ready for the ocean voyage as roll-on / roll-off cargo to a client's power plant
- b.. One of the CSUs has been successfully installed
- c.. A CSU is positioned over a ship's hatch
- d.. A CSU is unloading a ship
- e.. GA drawing of a typical CSU
- f.. GA drawing of a typical BWSR

In detail:

a.. TKRI is proposing the supply of (2) CSUs
(60,000DWT; 2,000 tph/each), roll-on / roll-off for: \$32,800,000

The delivery time after acceptance of an order amounts to approximately: 30 ... 35
Months

a.. TKRI is proposing the supply of (2) BWSRs
w. field wiring material; 4,000 tph/4,000 tph for: \$17,550,000

The delivery time after acceptance of an order amounts to approximately: 28 ... 32
Months

a.. As a guideline, TKRI suggests allowing for erection costs for both BWSRs a cost
adder of approx. 35%, amounting to: \$ 6,200,000

Provided that both machines would be constructed concurrently, the erection would
require approximately: 6 ... 8 Months

The above budgetary Sell Prices are for information only and are submitted for
accounting purposes only; they do not represent stand-alone sell prices.

TKRI site advisors can be made available; current per-diem rates shall apply at the time
when the job site is active.

We thank you for your interest in ThyssenKrupp Robins, Inc. as a potential supplier for
this valued project.

Kind regards,



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ATTACHMENT F

CONTINUOUS BARGE UNLOADER BUDGETARY PROPOSALS

ThyssenKrupp Robins, Inc.

Ulrich Pahl

Mgr. Estimating/Sales
7730 East Belleview Ave., Suite 404
Greenwood Village, CO 80111-5820
E-mail: ulrich.pahl@thyssenkrupp.com

Phone: (303) 793-2621

(303) 770-0808 (switch board)

Fax: (303) 770-4522

Please visit our Web Site at <http://www.thyssenkrupprobins.com>

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CONTINUOUS BARGE UNLOADER BUDGETARY PROPOSALS



TAMPA ELECTRIC COMPANY

BIG BEND POWER STATION

PROJECT NUMBER 28975-001

COAL FIELD STUDY – PHASE II

EQUILIBRIUM CRANE BARGE UNLOADER MINISPEC


Specification No. 15-6-704M

Prepared for



September 2007

Washington Group International, Inc.
Building 510 Carnegie Center
Princeton, New Jersey 08540-5287

 Washington Group International	Big Bend Coal Yard Equipment Upgrade Equilibrium Crane Barge Unloader	Project No.: 28975-001 Specification No.: 15-6-704M Revision: B
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ATTACHMENTS

ATTACHMENT A – Bidding Drawings / Photographs

<u>Drawing Number</u>	<u>Title</u>
11473-1241-85C	Dravo Barge Unloader General Arrangement Drawing
11473-FM-3F-1	Dravo Barge Unloader and Dock Plan
11473-FC-14J-3	Barge Dock Foundation Sheet 9, Loading Criteria
P97644	Ocean Going Coal Barges Data Sheet
7220-11	Ocean Going Coal Barges Data Sheet
349-MSK-1A	Big Bend Coal Yard Dock Layout
Photographs	DRAVO Barge Unloader



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ATTACHMENT G

EQUILIBRIUM CRANE UNLOADERS' MINISPEC AND RFQ

1.0 General

1.1 Scope of Work

This specification and its attachments cover the design, engineering, furnishing, fabrication, delivery, unloading, storage, protection, removal from storage, erection, installation, testing, commissioning and placing into successful operation two (2) track mounted Equilibrium Crane Type Barge Unloaders and ancillary equipment as specified herein at Tampa Electric Company's Big Bend Station.

It is not Tampa Electric's intent to specify all technical requirements, nor to set forth those requirements covered by applicable codes and standards. The Contractor's product shall meet the requirements of this Specification and the applicable industry standards.

Each Equilibrium Crane Type Barge Unloader shall have an unloading capacity of 2,000 TPH and the two (2) new Equilibrium Cranes will replace the existing 4,000 TPH capacity DRAVO Continuous Barge Unloader which will be dismantled and removed after erection, installation and commissioning of the new machines.

BUDGETARY PRICING REQUEST

The Contractor shall submit budgetary quotations to +/- 15% accuracy for each of the following:

- Design, engineer, fabricate, furnish and deliver two (2) 2,000 TPH capacity Equilibrium Crane Type Barge Unloaders and ancillary equipment in accordance with the detailed requirements further defined herein.
- Unload, store, protect, remove from storage, install erect, commission and turnover (2) 2,000 TPH capacity Equilibrium Crane Type Barge Unloaders and ancillary equipment in accordance with the detailed requirements further defined herein.



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ATTACHMENT G

EQUILIBRIUM CRANE UNLOADERS' MINISPEC AND RFQ

Work by Contractor

A. Equipment

1. The Contractor shall furnish and erect two (2) complete machines. Each machine shall include, but not be limited to, the following:
2. Fully enclosed power module.
3. Main Variable Volume piston pumps with load sensing pressure limiting horse power control.
4. Independent closed loop variable volume, load sensing position swing pump with full proportional torque control.
5. Identical double acting hydraulic cylinders shall operate boom and counterweight. Cylinders shall be equipped with safety counterbalance valves on both the rod and base end.
6. Overload Protection with an integrated load sensing and angle limiting safety system to protect the crane from being overloaded.
7. Structural Components shall be all welded, heavy duty modular, box steel construction. Structural steel shall be galvanized and fabricated by an AISC certified shop in accordance with the technical specifications.
8. Equilibrium Crane driven and non-driven travel bogies.
9. All pivot points shall be designed with oversized pins and journal brass bushings with automatic lubrication.
10. A centralized automatic lubrication system shall be installed as standard equipment to provided continuous lubrication to all pivot points.
11. An acoustically insulated operators' cabin shall be provided and equipped with fully adjustable upholstered operators' seat. Ergonomically positioned, multi-function joysticks to provide precise and proportional control of the crane functions and include grab control. A large tinted, safety glass window shall be provided to surround the operator and maximize the view of the work area. All controls and instruments shall be positioned for easy access and



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EQUILIBRIUM CRANE UNLOADERS' MINISPEC AND RFQ

monitoring. Standard equipment includes a large capacity air conditioner / heater, and defroster.

12. All required access ladders, stairs, walkways and platforms shall be provided. Access to the crane's superstructure and all service points shall be provided and accomplished by using wide ladder, stairs and walkways fabricated from galvanized treadgrip material to provide maximum adhesion.
13. 480V high pressure sodium vapor (or metal halide) lights shall be provided on the crane rotating structure to permit operation of the crane during poor visibility and night.
14. One (1) 100 ton capacity traveling surge hopper, one (1) 2,000 TPH capacity discharge belt feeder and all required supporting structure, driven and non-driven travel trucks, chutework, belting, pulleys, drive equipment, shafting, pillow block bearings, idlers, belt cleaners, guards, emergency pull cord switches, misalignment and zero speed switches and all other necessary appurtenances and miscellaneous items.
15. Chutework, housings, skirtboards, curtains and closures as necessary to make the Barge Unloader a complete system.
16. A fog type dust suppression system to provide dust control at each loading and transfer point.
17. Automatic rail clamps.
18. Hurricane tie-downs.
19. Anemometer, annunciator, and alarms.
20. Instrument installation materials including instrument tubing, piping and air distribution piping.
21. Shop prime and finish painting of equipment. Structural steel shall be galvanized as defined herein.
22. Provide power, control and instrumentation requirements, including all required unloader equipment control logic. The operator control cab shall be furnished with a Programmable Logic Controller (PLC) through which all barge unloading functions will be initiated and performed. The barge unloading PLC will interface with the plant



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EQUILIBRIUM CRANE UNLOADERS' MINISPEC AND RFQ

DCS to permit the status of unloading activities/functions to be displayed in the coal handling system control room.

23. Provide a minimum 15 ton capacity dozer lifting system to lift a payloader from the dock and set in or remove from the bottom of an empty cargo hold of an ocean going vessel. Lift system shall be provided with a load moment indicator in accordance with longshoreman crane requirement standards.
24. All applicable design loads and forces required to enable Tampa Electric's Engineer to verify that the existing dock structure will provide satisfactory support and service for the new machines.
25. Training of Tampa Electric's operating staff.
26. One set of any special operating and maintenance tools and devices as required.
27. All special test equipment required for installation, operation and maintenance of the equipment.
28. Spare parts required during installation and start-up.
29. Weld procedures and procedure qualifications, welder qualifications; weld acceptance criteria and NDE procedures all in accordance with AWS requirements.
30. Certified Material Test Reports (CMTR) of physical/chemical properties for all structural steel materials.
31. Electrical grounding connections, between Contractors furnished equipment and Contractor furnished structures.
32. The Contractor's proposal shall include:
 - I/O counts for the following categories of signals:
 - Analog inputs.
 - Analog outputs.
 - Digital inputs.
 - Digital outputs.

Connected HP and BHP for all equipment.



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B. Services

The Contractor shall furnish a completely erected installation, on Tampa Electric's foundations for the structures, equipment, and accessories to be furnished by the Contractor. Services performed by the Contractor shall include, but shall not be limited to, the following:

1. Erection and installation labor
2. Labor supervision
3. Receiving, unloading, sorting, and hauling of the material and equipment from delivery point to storage area and from storage area to point of erection. The Contractor shall assume all responsibility for care and protection from unloading through erection. The Contractor shall be responsible for demurrage charges for equipment and materials unloaded and stored by him.
4. Receipt of all shipments at the jobsite, specifically including a determination that equipment is complete in accordance with the shipping list and that each component is undamaged. The Contractor shall promptly unload all equipment received at the jobsite. Unloading shall be conducted utilizing proper supervision and unloading equipment and observing all handling instructions indicated on the shipping containers.
5. Unload and store all tools and spare parts furnished with the equipment. Any tools furnished with the equipment and used for erection purposes shall be cleaned and reconditioned before being returned to Tampa Electric.
6. Weather protection, including temporary heat, if required for protection of equipment in storage, or erected, and also as required for the proper continuance of erection, until the installation is accepted by Tampa Electric for operation.
7. Furnish temporary buildings or structures required for the Contractor's work including office change house, sanitary, storage, all interior partitions, shelves, bins, blueprint racks, file cabinets, office furniture, telephone, and any HVAC as may be required by the Contractor.



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8. All materials, equipment, tools, etc., used by the Contractor for the installation of the equipment shall be cleared through Tampa Electric's receiving warehouse both on entrance to and egress from the project site.
9. Labor for start-up inspection and miscellaneous start-up work during preliminary operation.
10. Labor for final alignment of equipment and testing training of loaded belts while handling coal, and testing of coal handling equipment.
11. The Contractor shall furnish all cranes, rigging, erection scaffolding, trucks, and derricks, including maintenance and fuel.
12. All rigging equipment shall be furnished by the Contractor and shall be tested prior to actual use in accordance with applicable ANSI and OSHA requirements. Contractor's lifts over 25 tons shall be designed by an engineer licensed in the state of Florida and submitted for approval to Tampa Electric's designated representative. Lifts over 25 tons shall be made in accordance with Tampa Electric procedures as described in item 19.
13. The Contractor shall be responsible for all engineering calculations related to the selection of lifting and rigging equipment, design of temporary steel, design and arrangement of scaffolding, design of temporary attachments to existing plant components, and design of miscellaneous steel used for rigging. All such calculations shall be sealed by a Professional Engineer registered in the State of Florida and shall be subject to approval by Tampa Electric's designated representative.
14. All required construction scaffolding, temporary stairs, floors, ladders, platforms and railings shall be furnished by the Contractor and shall be designed, erected, and used in accordance with the requirements of the Occupational Safety and Health Administration (OSHA).
15. All cranes/lifting devices, heavy rigging, including hoisting engines, cable, and cable blocks shall be furnished by the Contractor and shall be inspected daily by Contractor's and Tampa Electric's designated Safety Representatives prior to being put in service. Any crane/lifting device not found to be in a safe condition shall be



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marked and removed from the site. If a ring crane is required to erect the machines it shall be furnished by the Contractor.

16. All light rigging such as air hoists, rope, rope blocks, and chain hoists shall be furnished by the Contractor.
17. The Contractor shall provide and place all crane mats required to complete the work..
18. The Contractor shall submit for Tampa Electric's review the detailed hoisting and rigging procedures that he plans to implement in the execution of the work.
19. The Contractor shall complete and submit a "Lifting Permit" to Tampa Electric's designated representative for lifts over 25 tons net hook load. No lift shall start without Tampa Electric's designated representative's prior review of Contractor's Lifting Permit.
20. The Contractor will be provided with 480 volt power in the vicinity of each work area. It shall be the Contractor's responsibility to step down this power source and provide the cabling as required to extend power from these distribution centers to each point of use. The Contractor shall identify their specific power requirements in each area prior to mobilization.

1.3.6 Work by Tampa Electric

The following materials and services will be provided by Tampa Electric:

1. All required civil work.
2. Inspection and verification of adequacy of all foundations and concrete slabs for support of structures and equipment, including furnishing of all anchor bolts, embedded plates or items to meet the Contractor's requirements.
3. All wiring external to the equipment.
4. 4160 volt switchgear for large motors.
5. Electrical grounding connections between Contractor furnished equipment and structures and the plant's grounding grid.



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1.2 Codes and Standards

All Equilibrium Crane Unloader equipment and appurtenances shall be manufactured in accordance with the following Codes and Standards, including all amendments in effect at time of Purchase Order placement. The Project Specific Data Sheets will specify the primary applicable codes.

These codes and standards set forth-minimum requirements necessary to assure satisfactory performance of the Contractor's equipment. Other internationally recognized codes and standards will be acceptable provided they meet or exceed the requirements of the listed codes and standards. If different from list, Contractor shall submit for Tampa Electric's approval, details of the codes and standards, which Contractor proposes to use. Contractor shall demonstrate to the satisfaction of Tampa Electric that these codes and standards meet or exceed the requirements of the codes and standard listed.

The equipment shall meet and satisfy all applicable requirements of pertinent federal, state and municipal laws, regulations, codes, standards and ordinances.

In the event of any conflict between standards, codes and this specification, Contractor shall refer the conflict to Tampa Electric's designated representative for written resolution.

The Contractor shall provide a list of codes and standards used for the manufacturer of Contractor's products that are in effect at the time of Purchase Order.

1.2.1	AFBMA	Anti-Friction Bearing Manufacturers Association
1.2.2	AGMA	American Gear Manufacturers Association
1.2.3	AISC	American Institute of Steel Construction
1.2.4	AISI	American Iron and Steel Institute
1.2.5	ANSI	American National Standards Institute
1.2.6	API	American Petroleum Institute



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1.2.7	ASCE	American Society of Civil Engineers
1.2.8	ASME	American Society of Mechanical Engineers
1.2.9	ASTM	American Society for Testing and Materials
1.2.10	AWS	American Welding Society
1.2.11	BOCA	Building Officials & Code Administration International, Inc.
1.2.12	CEMA	Conveyor Equipment Manufacturers Association
1.2.13	CFR	Code of Federal Regulations
1.2.14	FBC	Florida Building Code
1.2.15	FM	Factory Mutual
1.2.16	HI	Hydraulic Institute Standards
1.2.17	IEEE	Institute of Electrical and Electronics Engineers
1.2.18	IPCEA	Insulated Power Cable Association
1.2.19	ISA	Instrument Society of America
1.2.20	MPTA	Mechanical Power Transmission Association
1.2.21	MSS	Manufacturers Standardization Society
1.2.22	NACE	National Association of Corrosion Engineers
1.2.23	NEC	National Electrical Code
1.2.24	NESC	National Electric Safety Code
1.2.25	NEMA	National Electrical Manufacturers Association
1.2.26	NFPA	National Fire Protection Association
1.2.27	NPTA	National Power Transmission Association
1.2.28	OSHA	Occupational Safety and Health Administration
1.2.29	PFI	Pipe Fabrication Institute
1.2.30	RMA	Rubber Manufacturers Association
1.2.31	UBC/IBC	Uniform Building Code/International Building Code or Applicable Local Building Code
1.2.32	SSPC	The Society for Protective Coatings



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1.2.33 UL Underwriters Laboratory

Quality Assurance and Quality Control

- 1.3.7 Quality Assurance requirements shall be in accordance with the provisions of the Subcontract documents and as specified in this specification. The Contractor is directly responsible for the quality of the work.
- 1.3.8 The Contractor shall provide a QA / QC Program, which is structured so that all aspects of quality are defined and verified for all items within Contractor's scope.
- 1.3.9 Field quality assurance and quality control procedures shall be submitted to Tampa Electric's designated representative for review before work commences.
- 1.3.10 The Contractor shall submit resumes and qualifications for the proposed quality control staff to Tampa Electric for review.



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EQUILIBRIUM CRANE UNLOADERS' MINISPEC AND RFQ

From: ben.dudek@metso.com

Sent: Tuesday, October 30, 2007 4:37 PM

To: Kelly, James

Cc: Rizzi, Ray; tom.lippencott@metso.com; john.donaghy@metso.com;
kim.hastings@metso.com

Subject: Re: FW: TECO Big Bend Coal Yard Upgrades - Equilibrium Crane Barge Unloaders'
Budgetary Request

Jim,

Order of Magnitude price for the two-2000-tph machines is as follows:

\$US 10,000,000 (Six-Million US Dollars), FOB Factory

\$US 1,000,000 (One-Million US Dollars), Freight

\$US 5,000,000 (Five-Million US Dollars), Erection and commissioning

Approximate weight of the machines- 600,000-lbs., bucket- 32,000-lbs, hopper-250,000-lbs. In addition, 190,000-lbs of counterweight per machine.

Just one point to make on the different scenarios. The CBU will get you the most annual tonnage and lifetime tonnage followed by the wire rope grabs and lastly the hydraulic cranes.

Best Regards

Ben Dudek

Principal Engineer

Proposal and Sales Support

Metso Minerals

1500 Corporate Drive, Suite 300

Canonsburg, PA 15317

e-mail: ben.dudek@metso.com

phone: 412-269-5214

fax: 412-269-5161

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EQUILIBRIUM CRANE UNLOADERS' MINISPEC AND RFQ

"Kelly, James" <James.Kelly@wgint.com>
10/30/2007 11:55 AM
To "Dudek, Ben. (Metso)" <ben.dudek@metso.com>
cc "Rizzi, Ray" <Ray.Rizzi@wgint.com>
Subject FW: TECO Big Bend Coal Yard Upgrades - Equilibrium Crane Barge
Unloaders' Budgetary Request

Ben,

Can you possibly give me a budgetary cost to furnish and erect (2) 2,000 TPH Equilibrium
Cranes. Sent originally to Tom on 9/19/07 – see below attachment.

Thanks in advance for your support.

Regards,

Jim Kelly

James M. Kelly, P.E.
Consulting Engineer
Washington Group International Inc.
510 Carnegie Center
Princeton, NJ 08543
office: 609.720.3604
fax: 609.720.2384
cell: 609.712.5611
email: james.kelly@wgint.com

From: Kelly, James
Sent: Wednesday, September 19, 2007 11:22 AM
To: Lippencott, Tom (Metso)
Cc: Patel, Yogesh (TECO); Visbisky, Robert (TECO); Rizzi, Ray; Kurilla, Robert
Subject: TECO Big Bend Coal Yard Upgrades - Equilibrium Crane Barge Unloaders' Budgetary
Request



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EQUILIBRIUM CRANE UNLOADERS' MINISPEC AND RFQ

Tom ,

Washington Group International has been tasked by Tampa Electric Company to obtain budgetary pricing for activities which are required to replace major coal handling system equipment in support of a plan to extend the operating life of their Big Bend Power Station. The equipment to be replaced are the the existing coal barge unloader, north stacker and south stacker reclaimer.

Please submit a budgetary quotation (+/- 15%) to furnish and erect two (2) 2,000 TPH capacity Equilibrium Crane Barge Unloaders as a replacement for the existing DRAVO coal barge unloader in accordance with the requirements of the attached specification. Existing equipment and dock arrangement drawings and photographs are included to help with the development of your pricing. Please email your budgetary proposal to me no later than October 3rd, 2007. Please call or email me if you have any questions.

Thank you for your support in this expedited request.

Jim Kelly

<<Equilibrium Crane Unloader Minispec Rev B, RFQ Issue.doc>> <<Ocean Going Coal Barges Data Sheets.PDF>> <<11473-FC-14J-3, Barge Dock Fdn Sh-9, Loading Criteria.TIF>> <<Dravo Barge Unloader-1.JPG>> <<Dravo Barge Unloader-2.JPG>> <<Dravo Unloader and Dock Plan.PDF>> <<Dravo Unloader GA Dwg No.11473-12 41-85C.pdf>>

James M. Kelly, P.E.
Consulting Engineer
Washington Group International Inc.
510 Carnegie Center
Princeton, NJ 08543
office: 609.720.3604
fax: 609.720.2384
cell: 609.712.5611
email: james.kelly@wgint.



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EQUILIBRIUM CRANE UNLOADERS' MINISPEC AND RFQ

E-Crane International USA

1332 Freese Works Place.
Galion, Ohio 44833
Telephone: (419) 468-0090 - Fax: (419) 468-0074

September 20, 2007

James M. Kelly, P.E. Consulting Engineer Washington Group International Inc. 510 Carnegie Center
Princeton, NJ 08543
james.kelly@wgint.com

RE:

Project: TECO, Big Bend Power Station. Project # 28975-001 Coal Field Study – Phase II
Equilibrium Crane Barge Unloader Minispec. - Specification No. 15-6-704M
ECI Proposal Number: P30-20319

Dear Mr. Kelly;

A few comments to the proposal and supporting documents:

The drawings are from the Progress Energy Project in Crystal River, FL. And do not reflect what we are proposing to offer directly. For example: The Progress Energy cab is extended more than usual, the Grab extension is a special design for Progress and there are some other differences from the normal offering. We will adapt the Crane to your Client's requirements once we have a bit more time to generate specific drawings and discuss this project with you and your client in more detail.

As to item 22: It is customary to lift the dozer with the E-Crane into and out of the vessel. An LMI is part of the E-Crane. However, I would like to check to see if this is agreeable to the longshoremen, since we have seem some surprising "attitudes". A Pdf of the procedure is attached. The E-Crane also has a lift mode which slows the crane movement down.

Item 24:

Training: This needs to be a bit more specific. Our last client, much to our surprise wanted 80 persons trained – this is not normal. We normally provide 16 hours of classroom and hand-son training. We will provide additional training at cost, but we need to know beforehand. The lesser the number of operators,



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EQUILIBRIUM CRANE UNLOADERS' MINISPEC AND RFQ

the better for the Crane!

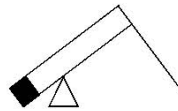
Quality control:

The E-Crane is an engineered product manufactured by ISO certified contractors. Assembled in Belgium according to EC standards and standards for mobile material handling equipment. All welders are certified by the German TUV. The client/contractor is welcome to inspect or have third party inspections performed at any time.

www.ecrane-usa.com

jerry.hoffmann@ecrane-usa.com

www.ecrane-usa.com



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jerry.hoffmann@ecrane-usa.com

Shipping – Install

We propose to ship the Crane(s) as upper and lower. This saves a tremendous time in erection/install and allows the client to move fuel in a very short time. Since an outage is normally not very welcomed at Power plants! However, please let us make sure that this can be done. We had a very unpleasant surprise with the delivery of the last E-Crane at Progress Energy! The quoted delivery/install pricing is only valid if we can deliver the 2 Cranes as described in the proposal. We can also do a conventional install, but this will take more time and most likely be more expensive as well.

I hope I do not appear to be too nitpicking this early in the game, but, as said before, we had some sobering experiences.

I will be on vacation for the next 2 weeks. Mr. Osborne has been copied and is informed. He can be reached at 419-468-0090 or emailed at Mark.osborne@ecrane-usa.com

Mr. Aaron Bennett is our project coordinator and is also able to handle any questions you may have in the meantime. He can be reached at 419-468-0090 or emailed at Aaron.bennett@ecraneusa.com



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EQUILIBRIUM CRANE UNLOADERS' MINISPEC AND RFQ

I thank you for this opportunity. We will do everything possible to support you as well as offer you a hassle – free buying experience, a smooth installation and trouble-free operation.

Jerry E. Hoffmann Product Support Manager, ECI 419-468-0090 419-834-0564 cell
jerry.hoffmann@ecrane-usa.com jhoffmann1@citynet.net www.ecrane-usa.com



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ATTACHMENT H

EQUILIBRIUM CRANE UNLOADERS' BUDGETARY PROPOSALS

E-Crane International USA

1332 Freese Works Place.
Galion, Ohio 44833
Telephone: (419) 468-0090 - Fax: (419) 468-0074

Proposal Number: P30-20319 Date: 09-19-07
James M. Kelly, P.E. Consulting Engineer,
Washington Group International Inc. - 510 Carnegie Center - Princeton, NJ 08543
office: 609.720.3604 - fax: 609.720.2384 - cell: 609.712.5611
email: james.kelly@wgint.com

Project: TECO, Big Bend Power Station. Project # 28975-001 Coal Field Study – Phase II
Equilibrium Crane Barge Unloader Minispec. - Specification No. 15-6-704M

Budgetary Proposal for bid purposes only!

One (1) Series 3000 Equilibrium Crane Model 23317 Electric / Hydraulic Powered Material Handler mounted on a custom high rail portal lower, with the following technical features, operating components and characteristics:

FULL RANGE DUTY CYCLE CAPACITY: 25.3 US tons Limited Range Power Boom
Duty Cycle Capacity 33.0 US tons Limited Range Power Boom Lift Capacity 44.0 US tons

OPERATING RANGE

Minimum Outreach Range* (from centerline of rotation): 15 feet (4.5 m) Maximum Outreach (from centerline of rotation): 117 feet (35.85 m) Downreach Range* (below main boom pivot): 90 feet (28 m) Lifting Range (vertical lift): 161 feet (49.m) Boom Operating Angles (above and below horizontal): -35° to +50° Stick Operating Angles (before and after vertical): -45° to +55° Degrees of Rotation: 360° continuous

OPERATING SPEEDS: (independent operation) Main Boom Tip - 360 feet / minute Arm Tip: 220 feet / minute Swing: 2.0 rev / min

ESTIMATED DUTY CYCLE PERFORMANCE: see dwg Pick - Swing 45° - Drop - Swing 45°, average: 38 seconds

POWER: Power Supply: 4160 volts AC, 3-Phase, 60 Hz Electric Motor: 800 horsepower (600 kW)



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EQUILIBRIUM CRANE UNLOADERS' BUDGETARY PROPOSALS

Main Hydraulic Pump : 380 gpm (1440 liters/min) Swing Pump 121 gpm (458 liters/min)
Main System Relief Setting: 3990 psi (275 bar) Hydraulic Reservoir: 1056 gallon (4000 liters)

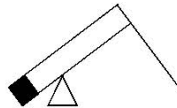
ESTIMATED DIMENSIONS: (see attached drawing) Main Boom Length: 61'6" feet (18.75 m) Arm Length:
47.6 feet (14.5 m) Operator's Eye Level * (above swing bearing): 5.5 feet (1.67 m)

* Final operating reaches are determined by a combination of eye level requirements, boom operating angles, and superstructure mountings

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jerry.hoffmann@ecrane-usa.com

www.ecrane-usa.com



jerry.hoffmann@ecrane-usa.com

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ESTIMATED WEIGHTS: Operating Weight - Superstructure: 572,000 lbs. (260,000 kg) Weight – Lower
(approx.) 352,000 lbs. (160,000 kg)

MAJOR COMPONENTS & FEATURES LISTING:

The E-Crane uses only high quality components supplied by leading manufacturers to assure reliability and worldwide parts and service availability. The following is a listing of the major components and manufacturers to be supplied on the proposed machine:

- | | |
|----------------------|---|
| Main Power: | 800 Horsepower (600 kW), 480V 4160 Volts, 60 Hz, 3-Phase, NEMA Frame 449T, 1800 rpm, 96.2% efficiency @ Full Load, 1.5 Service Factor, Class 'F' Insulation.
Manufacturer: EFFACEC-WEG |
| Main Hydraulic Pump: | Variable volume piston type pumps with load sensing and pressure limiting control. Flow rate: 380 gpm Maximum operating pressure: 3990 psi (275 bar) Manufacturer: Caterpillar |
| Swing System: | Independent closed loop system Variable volume, load sensing, piston type swing pump with full proportional torque control Manufacturer: Rexroth

Two (2) fixed displacement, piston type swing motors and self- adjusting swing disc brakes Manufacturer: Rexroth

Two (2) planetary type swing drive gearboxes equalize |



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EQUILIBRIUM CRANE UNLOADERS' BUDGETARY PROPOSALS

swing pinion tooth pressures thereby maximizing pinion and gear wear life Manufacturer: Zollern

Oversize anti-friction slewing turntable bearing with integral swing gear Manufacturer: Rotek

Hydraulic Cylinders (4):

Identical double acting hydraulic cylinders used to operate the boom elevation and counterweight / arm position. All cylinders are equipped with safety counterbalance valves. bore: 11.00" (279 mm), stroke: 70.86" (1800mm), rod: 7.00" (179 mm) Manufacturer: Caterpillar

Overload Protection/Limit Switches:

The E-Crane is equipped with a load sensing / angle limiting system to protect the crane from being overloaded and to permit exertion of a downward force equal up to 50% of the crane's lifting capacity. The ability to exert a downward force further enhances the cranes productivity by maximizing the capacity of the grab.

Structural Components:

All welded, heavy duty, modular and box type steel construction is used throughout.

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Operator's Cabin:

The large acoustically insulated operator's cab is equipped with a fully adjustable, upholstered operator's seat. Ergonomically positioned multi-function joysticks provide precise and proportional control of the craning functions and include grab controls. Extra large tinted, safety glass windows surround the operator and allow an excellent view of the work area. All controls and instruments are positioned for easy access and operator monitoring. A large capacity air conditioner / heater/defroster is provided as standard equipment as well as AM / FM / CD Player.

Centralized Lubrication System:

A centralized lubrication system is provided as standard equipment to provide continuous lubrication to all pivot points.

Boom Pins and Bushings:

All pivot points are designed with oversized pins and bushings, minimizing bearing pressures and maximizing bushing and pin life.

Ladders, Stairs and Walkways:

Excellent access to the E-Crane's superstructure and all service



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EQUILIBRIUM CRANE UNLOADERS' BUDGETARY PROPOSALS

- (as supplied with optional mounting bases) points is accomplished using extra wide ladders, stairs and walkways fabricated from galvanized treadgrip type material to provide maximum adhesion.
- Lighting: Appropriate 480-volt high-pressure sodium vapor lighting is provided on the crane and pedestal to permit operation of the crane during non-daylight hours. 4 x 400 watt
- Manuals and Documentation: Three copies of the operators, maintenance, and Parts manuals will be furnished to the Purchaser upon delivery of the crane to the project site. Electronic copies of the manuals are also provided.

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Budgetary Price

(1) Crane Complete including high portal rail lower with independent lower power unit:	\$ 4,815,506
(1) 33 yd3 Clamshell Grab	\$ 159,900
(1set) Hurricane Tie-downs.....	\$ Included
(1) Complete Hopper and Towbars, Feeder, and dust suppression.....	\$ 985,000
(1) Set for (1) Crane Automatic Rail Clamps.....	\$ 34,900
(1) Complete Turnkey installation, per Crane. Crane will be shipped pre-assembled into an upper and lower, lifted onto the client's dock by the ship's gear (each Crane)	\$ 489,000
(1) Control and Instrumentation package as per Paragraph 21 (Subcontracted).....	\$ 98,665
Subtotal for One.....	\$ <u>6,582,971</u>
Special Tool set (can be used for both Cranes)	\$ 2,900
Total fixed price for complete project as specified.....	\$ <u>13,168,842</u>

Terms: 10% Down payment at contract execution 15% at the completion of the Engineering Drawings 25% on receipt of steel construction at the Indusign factory in Belgium 30% on shipment of completed Crane from the factory 15% on arrival of components at the assembly site 5% after completion of installation, testing and tuning

Note: Delivery and Installation

It is understood that there will be 4160V power available for the E-Crane during and after the installation.



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Price and delivery is valid only if there are no impediments to a foreign flag vessel docking and offloading the Cranes at the client's dock. It is also understood that this will be done by the ship's crew and that there will be no union or pilots association impediments to doing so. The dock area will have to be free of impediments and no other vessels can be docked during the offloading process. Estimated time for the offloading process: From docking to un-docking: 4 days. ECI will not be responsible for delays due to weather and/or beyond ECI's control and/or consequential damages or loss of profit.

DELIVERY:

12 to 14 Months after Receipt of Order and Down Payment. Deliveries Subject to Prior Sales.

Warranty:

The complete crane carries a Standard Limited Warranty, 2000 hours or 1 year whichever occurs first. Please see attached Standard Limited Warranty. The Bucket Warranty is 6 Months. This does not include any damage from abuse.

Validity: This proposal is valid for 30 days

Signed

a.A. Jerry E. Hoffmann ECI – Manager - Product Support – Electronically transmitted – hardcopy on request



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EQUILIBRIUM CRANE UNLOADERS' BUDGETARY PROPOSALS



TAMPA ELECTRIC COMPANY

BIG BEND POWER STATION

PROJECT NUMBER 28975-001

COAL FIELD STUDY – PHASE II

CLAMSHELL BARGE UNLOADER ERECTION MINISPEC


Specification No. 15-6-705M

Prepared for



September 2007

Washington Group International, Inc.
Building 510 Carnegie Center
Princeton, New Jersey 08540-5287

 Washington Group International	Big Bend Coal Yard Equipment Upgrade Clamshell Barge Unloader	Project No.: 28975-001 Specification No.: 15-6-705M Revision: C
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ATTACHMENT A – Bidding Drawings / Photographs

<u>Drawing Number</u>	<u>Title</u>
11473-1241-85C	Dravo Barge Unloader General Arrangement Drawing
11473-FM-3F-1	Dravo Barge Unloader and Dock Plan
11473-FC-14J-3	Barge Dock Foundation Sheet 9, Loading Criteria
P97644	Ocean Going Coal Barges Data Sheet
7220-11	Ocean Going Coal Barges Data Sheet
Photographs	DRAVO Barge Unloader



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1.0 GENERAL

This specification and its attachments cover the installation and erection of one (1) Clamshell Barge Unloader equipment, facilities and structures specified herein at Tampa Electric Company's Big Bend Station.

It is not Tampa Electric's intent to specify all technical requirements, nor to set forth those requirements covered by applicable codes and standards. The Contractor's product shall meet the requirements of this Specification and the applicable industry standards.

The Clamshell Barge Unloader (CBU) shall have a capacity of 3,500 TPH and will replace the existing 4,000 TPH capacity DRAVO Continuous Barge Unloader which will be dismantled and removed after erection, installation and commissioning of the new machine.

BUDGETARY PRICING REQUEST

The Contractor shall submit budgetary quotations to +/- 15% accuracy for each of the following:

- Install and erect one (1) 3,500 TPH capacity traversing Clamshell Barge Unloader in accordance with the detailed requirements further defined herein.

6.0 1.1 SCOPE OF WORK

1.3.11 Work by Contractor

A. Equipment

The Contractor shall erect one (1) complete machine comprised of the following:

21. One (1) 100,000 lb gross capacity clamshell grab bucket unloader with hinged boom fabricated from heavy duty welded plate girder steel ladder frame, double strand bucket chains, chain guides, buckets, drive assembly, drive and return sprockets and shafting, holdback, braking system, bucket ladder hoisting system, bucket ladder maintenance monorail, safety switches and all other necessary appurtenances and miscellaneous items.
22. One (1) 150 ton capacity traveling surge hopper, 3,500 TPH capacity discharge belt feeder and all required supporting structure and travel



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trucks, chutework, belting, pulleys, drive equipment, shafting, pillow block bearings, idlers, belt cleaners, guards, emergency pull cord switches, misalignment and zero speed switches and all other necessary appurtenances and miscellaneous items.

23. One (1) clamshell unloader traversing carriage assembly including motorized bridge girder frame type traversing carriage complete with carriage drive, speed reducer(s), drive shaft(s) with flexible couplings, carriage brake(s), carriage support trucks, festoon cable, carriage runway stops, bumpers, travel limit switches and all necessary appurtenances and miscellaneous items.
24. The unloader tower shall be supported from the rails by four (4) travel truck assemblies, one (1) at each corner of the tower. Each truck shall be provided with the required sets of driven and non driven wheels. The drive system shall provide a traversing speed range for the unloader tower of 2 fpm to 100 fpm. The cyclic operation and dynamic action of the grab unloader subjects the supporting structure to fatigue loading.
25. To ensure long service life of the unloading tower structure, the following procedures and features shall be incorporated:
 - Comprehensive modeling and finite element analysis shall be used in the development of robust supporting structure to ensure elimination of harmful stress concentrations and structural vibrations.
 - Stringent quality control and inspection shall be implemented during fabrication as well as analysis of connections and materials to assure safe, reliable operation and a fatigue-resistant structure.
 - Cushioned rail pad and rail clips shall be used to reduce and distribute dynamic loads and extend service life of the structure and mechanical components.
 - Apron structure shall be framed with twin box girders utilizing a structural tee section directly under the trolley runway rail. The design shall eliminate critical fatigue points and allow for uniform load transfer into the apron box girders. The unloader apron shall be articulated to allow folding to a vertical position



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when the unloader is not in use.

26. Chutework, housings, skirtboards, curtains and closures as necessary to make the Clamshell Barge Unloader a complete system.
27. A fog type dust suppression system to provide dust control at each loading and transfer point.
28. Automatic rail clamps.
29. Hurricane tie-downs designed to meet Tampa Electric design criteria.
30. Anemometer, annunciator, and alarms.
31. Latch hook to support the cantilever when the unloader is not operating.
32. Adequate access to all equipment, including stairs, ladders, walkways, platforms, and handrails.
33. Instrument installation materials including instrument tubing, piping, air distribution piping and heat tracing.
34. Shop prime and finish painting of equipment as defined herein. Structural steel shall be galvanized.
35. Provide power, control and instrumentation requirements, including all required CBU equipment control logic. The platform mounted control room shall be furnished with a Programmable Logic Controller (PLC) through which all barge unloading functions will be initiated and performed. The barge unloading PLC will interface with the plant DCS to permit the status of unloading activities/functions to be displayed in the coal handling system control room.
36. Provide a minimum 15 ton capacity dozer lifting system to lift a payloader from the dock and set in or remove from the bottom of an empty cargo hold of an ocean going vessel. Lift system shall be provided with a load moment indicator in accordance with longshoreman crane requirement standards.
37. The following operational, design and control features and capabilities shall be provided:



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- Bucket Trajectory Control: Prior to each unloading cycle, the grab controller shall calculate the grab trajectory for the most efficient unloading cycle time. Continuous monitoring of this trajectory and modulated acceleration and deceleration rates of the hoist and trolley motions shall ensure trouble-free unloading and accurate delivery of material into the hopper.
- Grab Return Control: The Control System shall allow the operator to adjust the return position of the grab through predetermined increment buttons.
- Automatic Grab Closing: To provide the control capability to automatically close the grab while in the material.
- Grab Fill Control: This control shall vary the amount of torque on the hold drive during grab closing operation and allow the operator to adjust how deep the grab will sink into the material and control the bucket fill for each lift.
- Grab Load Monitor System: This system shall monitor bucket load at the beginning of each cycle and alerts the operator in the event of an overflow condition.
- Hold and Close Drive Coordination While Hoisting: In manual, semi-automatic, and automatic modes, this monitor and attendant circuitry shall balance the loading on the hoisting equipment, thus eliminating long term hoist damage from unbalanced drive loading. Speed synchronization shall prevent slack rope lines while lowering and ensure that the bucket is fully open.
- Bucket Casting: Machine shall be designed to allow bucket casting for scraping of the cargo hold to be performed.
- Absolute Position Encoders: Grab drive position shall be constantly monitored by encoders connected to hold, close, rack, and travel drives. These feedback points shall be unaffected by power fluctuation or interruption.
- Ship Height Monitor: A position sensor shall continuously monitor changes in the location of the ship's deck that result from material removal and/or tide changes. This information



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shall allow the control system to adjust for ship height without interrupting unloading operations.

- On-Board Modem: To provide immediate communication with Supplier's service technicians for remote troubleshooting of system problems.
 - The control system shall be programmable and user friendly to allow the operator to make adjustments to suit various vessel holds and configurations.
38. Operator's control cab shall be ergonomically designed with wraparound windows, suitable illumination, heating, and air-conditioning systems
 39. All applicable design loads or forces required to enable the concrete work and structural steel to be designed by Tampa Electric's Engineer, equipment arrangement and platform requirements including O&M access space, control system operating procedures, logics, motor lists, motor and electrical equipment outline drawing, motor data sheets, mechanical equipment list, piping line, electrical interconnecting diagrams and schematic diagrams list, piping terminal points and connection types, instrument list, and all other engineering and design data required to interface with the balance of the plant.
 40. One set of any special operating and maintenance tools and devices as required.
 41. All special test equipment required for installation, operation and maintenance of the equipment.
 42. Spare parts required during installation and start-up.
 43. Weld procedures and procedure qualifications, welder qualifications; weld acceptance criteria and NDE procedures all per AWS requirements.
 44. Certified Material Test Reports (CMTR) of physical/chemical properties for all structural steel materials.
 45. Electrical grounding connections, between Contractors furnished equipment and Contractor furnished structures.



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C. Services

Services performed by the Contractor shall include, but shall not be limited to, the following:

46. Erection and installation labor
47. Labor supervision
48. Receiving, unloading, sorting, and hauling of the material and equipment from delivery point to storage area and from storage area to point of erection. The Contractor shall assume all responsibility for care and protection from unloading through erection.
49. Receipt of all shipments at the jobsite, specifically including a determination that equipment is complete in accordance with the shipping list and that each component is undamaged. The Contractor shall promptly unload all equipment received at the jobsite. Unloading shall be conducted utilizing proper supervision and unloading equipment and observing all handling instructions indicated on the shipping containers.
50. Unload and store all tools and spare parts furnished with the equipment. Any tools furnished with the equipment and used for erection purposes shall be cleaned and reconditioned before being returned to Tampa Electric.
51. Weather protection, including temporary heat, if required for protection of equipment in storage, or erected, and also as required for the proper continuance of erection, until the installation is accepted by Tampa Electric for operation.
52. Furnish any temporary buildings or structures required for the Contractor's work including office change house, sanitary, storage, all interior partitions, shelves, bins, blueprint racks, file cabinets, office furniture, telephone, and any HVAC as may be required by the Contractor.
53. All materials, equipment, tools, etc., used by the Contractor for the installation of the equipment shall be cleared through Tampa Electric's receiving warehouse both on entrance to and egress from the project site.



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54. Labor for start-up inspection and miscellaneous start-up work during preliminary operation.
55. Labor for final alignment of equipment and testing training of loaded belts while handling coal, and testing of coal handling equipment.
56. The Contractor shall furnish all cranes, rigging, erection scaffolding, trucks, and derricks, including maintenance and fuel.
57. All rigging equipment shall be furnished by the Contractor and shall be tested prior to actual use in accordance with applicable ANSI and OSHA requirements. Contractor's lifts over 25 tons shall be designed by an engineer licensed in the state of Florida and submitted for approval to Tampa Electric's designated representative. Lifts over 25 tons shall be made in accordance with Tampa Electric's lifting procedures described in item 19.
58. The Contractor shall be responsible for all engineering calculations related to the selection of lifting and rigging equipment, design of temporary steel, design and arrangement of scaffolding, design of temporary attachments to existing plant components, and design of miscellaneous steel used for rigging. All such calculations shall be sealed by a Professional Engineer registered in the State of Florida and shall be subject to review by Tampa Electric's designated representative.
59. All required construction scaffolding, temporary stairs, floors, ladders, platforms and railings shall be furnished by the Contractor and shall be designed, erected, and used in accordance with the requirements of the Occupational Safety and Health Administration (OSHA).
60. All cranes/lifting devices, heavy rigging, including hoisting engines, cable, and cable blocks shall be furnished by the Contractor and shall be inspected daily by Contractor's and Tampa Electric's designated Safety Representatives prior to being put in service. Any crane/lifting device not found to be in a safe condition shall be marked and removed from the site. If a ring crane is required to erect the machines it shall be furnished by the Contractor.
61. All light rigging such as air hoists, rope, rope blocks, and chain hoists shall be furnished by the Contractor.



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62. The Contractor shall provide and place all crane mats required to complete the work..
63. The Contractor shall submit for Tampa Electric's review the detailed hoisting and rigging procedures that he plans to implement in the execution of the work.
64. The Contractor shall complete and submit a "Lifting Permit" to Tampa Electric's designated representative for lifts over 25 tons net hook load. No lift shall start without Tampa Electric's designated representative's prior review of Contractor's Lifting Permit.
65. The Contractor will be provided with 480 volt power in the vicinity of each work area. It shall be the Contractor's responsibility to step down this power source and provide the cabling as required to extend power from these distribution centers to each point of use. The Contractor shall identify their specific power requirements in each area prior to mobilization.
66. The Contractor shall furnish all required office / change trailers, tools, office supplies, communications, consumables, sanitary facilities, on-site waste disposal to containers provided by the Owner. Portable toilets shall be of the chemically treated type obscured from public view and properly maintained. Sanitary facilities in trailers and other temporary structures shall be equipped with holding tanks or shall temporarily be connected to the permanent sewer system at a location provided by the Owner's designated representative

1.3.12 Work by Tampa Electric

The following materials and services will be provided by Tampa Electric:

1. All required civil work.
2. Inspection and verification of adequacy of all foundations and concrete slabs for support of structures and equipment, including furnishing of all anchor bolts, embedded plates or items to meet the Contractor's requirements.
3. All wiring external to the equipment.
4. 4160 volt switchgear for large motors.



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5. Electrical grounding connections between Contractor furnished equipment and structures and the plant's grounding grid.

1.2 Codes and Standards

All Clamshell Barge Unloader equipment and appurtenances shall be manufactured in accordance with the following Codes and Standards, including all amendments in effect at time of Purchase Order placement.

These codes and standards set forth-minimum requirements necessary to assure satisfactory performance of the Contractor's equipment. Other internationally recognized codes and standards will be acceptable provided they meet or exceed the requirements of the listed codes and standards. If different from list, Contractor shall submit for Tampa Electric's approval, details of the codes and standards, which Contractor proposes to use. Contractor shall demonstrate to the satisfaction of Tampa Electric that these codes and standards meet or exceed the requirements of the codes and standard listed.

The equipment shall meet and satisfy all applicable requirements of pertinent federal, state and municipal laws, regulations, codes, standards and ordinances.

In the event of any conflict between standards, codes and this specification, Contractor shall refer the conflict to Tampa Electric's designated representative for written resolution.

1.2.1	AFBMA	Anti-Friction Bearing Manufacturers Association
1.2.2	AGMA	American Gear Manufacturers Association
1.2.3	AISC	American Institute of Steel Construction
1.2.4	AISI	American Iron and Steel Institute
1.2.5	ANSI	American National Standards Institute
1.2.6	API	American Petroleum Institute
1.2.7	ASCE	American Society of Civil Engineers
1.2.8	ASME	American Society of Mechanical Engineers



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1.2.9	ASTM	American Society for Testing and Materials
1.2.10	AWS	American Welding Society
1.2.11	BOCA	Building Officials & Code Administration International, Inc.
1.2.12	CEMA	Conveyor Equipment Manufacturers Association
1.2.13	CFR	Code of Federal Regulations
1.2.14	FBC	Florida Building Code
1.2.15	FM	Factory Mutual
1.2.16	HI	Hydraulic Institute Standards
1.2.17	IEEE	Institute of Electrical and Electronics Engineers
1.2.18	IPCEA	Insulated Power Cable Association
1.2.19	ISA	Instrument Society of America
1.2.20	MPTA	Mechanical Power Transmission Association
1.2.21	MSS	Manufacturers Standardization Society
1.2.22	NACE	National Association of Corrosion Engineers
1.2.23	NEC	National Electrical Code
1.2.24	NESC	National Electric Safety Code
1.2.25	NEMA	National Electrical Manufacturers Association
1.2.26	NFPA	National Fire Protection Association
1.2.27	NPTA	National Power Transmission Association
1.2.28	OSHA	Occupational Safety and Health Administration
1.2.29	PFI	Pipe Fabrication Institute
1.2.30	RMA	Rubber Manufacturers Association
1.2.30	SSPC	The Society for Protective Coatings
1.2.32	UBC/IBC	Uniform Building Code/International Building Code or Applicable Local Building Code
1.2.33	UL	Underwriters Laboratory



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- 1.3 Quality Assurance and Quality Control
 - 1.3.13 Quality Assurance requirements shall be in accordance with the provisions of the Subcontract documents and as specified in this specification. The Contractor is directly responsible for the quality of the work.
 - 1.3.14 The Contractor shall provide a QA /QC Program which is structured so that all aspects of quality are defined and verified for all items within Contractor's scope.
 - 1.3.15 Field quality assurance and quality control procedures shall be submitted to Tampa Electric's designated representative for review before work commences.
 - 1.3.16 The Contractor shall submit resumes and qualifications for the proposed quality control staff to Tampa Electric for review.



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Jim,

Order of magnitude cost for two- 1950-tph grab unloaders is:

\$US 16,000,000, FOB Jobsite (Sixteen Million US Dollars)

Total weight of each machine is 1,300,000-lbs. Attached is the drawing of the machine. This is the same machine that is currently at Big Bend Station.

Budget cost for a continuous barge unloader same as the existing machine but with modern electrics is

\$US 14,000,000, FOB Jobsite (Fourteen Million US Dollars)

Best Regards

Ben Dudek
Principal Engineer
Proposal and Sales Support

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TAMPA ELECTRIC COMPANY

BIG BEND POWER STATION

PROJECT NUMBER 28975-001

COAL FIELD STUDY – PHASE II

BUCKET WHEEL STACKER RECLAIMER MINISPEC

Specification No. 15-6-705M

Prepared for



August 2007

Washington Group International, Inc.
Building 510 Carnegie Center
Princeton, New Jersey 08540-5287



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ATTACHMENT A – Bidding Drawings / Photographs

Drawing Number Title

11473-FM-3B-5	Existing Bucket Wheel Stacker Reclaimer and Yard Conveyor Arrangement Drawing
11473-1241-176	Exisitng Bucket Wheel Stacker Reclaimer General Arrangement Drawing
Photograph	Existing Bucket Wheel Stacker Reclaimer



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BUCKET WHEEL STACKER RECLAIMERS' MINISPEC AND RFQ

1.1 Scope of Work

This specification and its attachments cover the design, engineering, furnishing, fabrication, delivery, unloading, protection, storage, removal from storage, installation, erection and commissioning of two (2) Bucket Wheel Stacker Reclaimers at Tampa Electric Company's Big Bend Station.

It is not the Owner's intent to specify all technical requirements, nor to set forth those requirements covered by applicable codes and standards. The Contractor's product shall meet the requirements of this specification and the applicable industry standards.

The Two (2) Bucket Wheel Stacker Reclaimers will replace the following equipment:

- One (1) traveling tripper-stacker presently serving the north coal yard coal pile
- One (1) traveling bucket wheel stacker reclaimer presently serving the south coal yard coal pile

The Bucket Wheel Stacker Reclaimers will each have a stackout capacity of 4,000 TPH and reclaim capacity of 4,000 TPH

The Bucket Wheel Stacker reclaimers shall be designed to provide safe and reliable service based on 24 x 7 x 365 operation for a duty service life of 20 years.

BUDGETARY PRICING REQUEST

The Contractor shall submit budgetary quotations to +/- 15% accuracy for each of the following:

- Design, engineer, fabricate, furnish and deliver two (2) 4,000 TPH stacking capacity and 4,000 TPH reclaiming capacity Bucket Wheel Stacker Reclaimers in accordance with the detailed requirements further defined herein.
- Unload, store, protect, remove from storage, install erect, commission and turnover two (2) 4,000 TPH stacking capacity and 4,000 TPH reclaiming capacity Bucket Wheel Stacker Reclaimers in accordance with the detailed requirements further defined herein.



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1.3.17 Work by Contractor

The Contractor shall furnish and erect each complete machine to include, but not be limited to, the following:

1. A rotating wheel with cell-less digging buckets. The wheel shall be balanced, rigid welded steel plate construction, designed for heavy duty.
2. A bucket wheel boom of rigid welded steel plate construction, designed for heavy duty. All hydraulic systems and components required to raise and lower the boom.
3. A reversing, pivoted 72" wide boom belt conveyor, 110'-0" between drive and tail pulley centers, which shall operate at a maximum angle of incline/decline of +12/-12 degrees. The boom belt conveyor shall be complete and include all pulley assemblies, speed switches, pulley scrapers, belt cleaners, complete drive including motor, take-up, 6" dia. carrying and return idler rolls, hood covers, chutes and loading skirts, curved wind guards, and complete structural steel supports, including deck plate, double walkways with handrail and nylon covered pull cords and pull switches along both sides of the conveyor for emergency shutdown.
4. A supporting mast and rear counterweight structure, counterweight, including rebar, tie rods and steel shell. (Concrete will be supplied by the Owner).
5. A boom slewing drive and platform for support of above.
6. A gantry structure with rail traveling mechanism. The gantry structure shall consist of a rigid ring type girder with four (4) legs with each leg supported on a travel wheel group each with eight (8) travel wheels. Sixteen (16) of the thirty two (32) wheels will be driven by eight (8) electric motor drive arrangements. An equalizing system shall be provided to accommodate uneven track.
7. A tripper trailer section including bifurcated chutework and motor operated diverter gate to facilitate the selection of splitting or



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bypassing the flow of coal back to the yard conveyor or onto the boom conveyor for stackout.

8. All greasing and lubrication systems.
9. All complete motor drives.
10. All required electrical equipment including but not limited to, step down transformers, , motor control centers, power centers, power and control cable, cable reels, switches, sensing devices, plug chute switches and lighting equipment.
11. An electrical room/enclosure, located at a low elevation on the machine structure, to house the transformers, MCC's and power centers.
12. An Allen Bradley PLC based control system to provide completely automated control or a combination of automatic/manual control through a user friendly MMI on screen interface. A data link shall be provided to the plant communication system for monitoring. All communications from the reclaimer to the plant control system shall be via radio.
13. An elevated operator's cab, ergonomically designed with wraparound windows, suitable illumination, heating, and air-conditioning systems.
14. High density TV cameras suitably located to allow observation of all operations and functions from the control cab.
15. Adequate access to all equipment, including stairs, ladders, walkways, platforms, and handrails.
16. Suitable guards for tail pulleys and take-ups.
17. Hurricane tie-downs and rail clamps.
18. Anemometer, annunciator, and alarms.
19. Instrument installation materials including instrument tubing, piping, air distribution piping and heat tracing.
20. Shop prime and finish painting of equipment and structural steel, as defined herein.
21. One set of any special operating and maintenance tools and devices as required.



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22. All special test equipment required for installation, operation and maintenance of the equipment.
23. Weld procedures and procedure qualifications, welder qualifications; weld acceptance criteria and NDE procedures.
24. Certified Material Test Reports (CMTR) of physical/chemical properties for all structural steel materials.
25. Electrical grounding connections, between Sellers furnished equipment and Seller furnished structures.
26. The Seller's proposal shall include:
 - iii. I/O counts for the following categories of signals:
 - Analog inputs.
 - Analog outputs.
 - Digital inputs.
 - Digital outputs.
 - iv. Connected HP and BHP for all equipment.

D. Services

Services performed by the Contractor shall include, but shall not be limited to, the following:

27. Erection and installation labor
28. Labor supervision
29. Receiving, unloading, sorting, and hauling of the material and equipment from delivery point to storage area and from storage area to point of erection. The Contractor shall assume all responsibility for care and protection from unloading through erection. The Contractor shall be responsible for demurrage charges for equipment and materials unloaded and stored by him.
30. Receipt of all shipments at the jobsite, specifically including a determination that each shipment is complete in accordance with the shipping list and that each component is undamaged. The Contractor shall promptly unload all equipment received at the jobsite. Unloading shall be conducted utilizing proper supervision and



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unloading equipment and observing all handling instructions indicated on the shipping containers.

31. Unload and store all tools and spare parts furnished with the equipment. Any tools furnished with the equipment and used for erection purposes shall be cleaned and reconditioned before being returned to the Owner.
32. Weather protection, including temporary heat, if required for protection of equipment in storage, or erected, and also as required for the proper continuance of erection, until the installation is accepted by the Owner for operation.
33. Furnish any temporary buildings or structures required for the Contractor's work including office change house, sanitary, storage, all interior partitions, shelves, bins, blueprint racks, file cabinets, office furniture, telephone, and any heating or wiring as may be required by the Contractor.
34. All materials, equipment and tools required by the Contractor for the installation of the bucket wheel stacker reclaimers shall be cleared through the Owner's receiving warehouse both on entrance to and egress from the project site.
35. Labor for start-up inspection and miscellaneous start-up work during preliminary operation.
36. Labor for final alignment of equipment, training of loaded belts while handling coal, and testing of coal handling equipment.
37. All rigging equipment shall be furnished by the Contractor and shall be tested prior to actual use in accordance with applicable ANSI and OSHA requirements. Contractor's lifts over 25 tons shall be designed by an engineer licensed in the state of Florida and submitted for review to the Owner's designated representative.
38. The Contractor shall be responsible for all engineering calculations related to the selection of lifting and rigging equipment, design of temporary steel, design and arrangement of scaffolding, design of temporary attachments to existing plant components, and design of miscellaneous steel used for rigging. All such calculations shall be sealed by a Professional Engineer registered in the State of Florida and shall be subject to review by the Owner's designated representative.



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39. All required construction scaffolding, temporary stairs, floors, ladders, platforms and railings shall be furnished by the Contractor and shall be designed, erected, and used in accordance with the requirements of the Occupational Safety and Health Administration (OSHA).
40. All cranes/lifting devices, heavy rigging, including hoisting engines, cable, and cable blocks shall be furnished by the Contractor and shall be inspected daily by Contractor's and Owner's designated Safety Representatives prior to being put in service. Any crane/lifting device not found to be in a safe condition shall be marked and removed from the site. If a ring crane is required to erect the machines it shall be furnished by the Contractor.
41. All light rigging such as air hoists, rope, rope blocks, and chain hoists shall be furnished by the Contractor.
42. The Contractor shall provide and place all crane mats required to complete the work..
43. The Contractor shall submit for the Owner's review the detailed hoisting and rigging procedures that he plans to implement in the execution of the work.
44. The Contractor shall complete and submit a "Lifting Permit" to the Owner's designated representative for lifts over 25 tons net hook load. No lift shall start without Owner's designated representative's prior review of Contractor's Lifting Permit.
45. The Contractor will be provided with 480 volt power in the vicinity of each work area. It shall be the Contractor's responsibility to step down this power source and provide the cabling as required to extend power from these distribution centers to each point of use. The Contractor shall identify their specific power requirements in each area prior to mobilization.
46. The Contractor shall furnish all required office / change trailers, tools, office supplies, communications, consumables, sanitary facilities, on-site waste disposal to containers provided by the Owner. Portable toilets shall be of the chemically treated type obscured from public view and properly maintained. Sanitary facilities in trailers and other temporary structures shall be equipped with holding tanks or shall



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temporarily be connected to the permanent sewer system at a location provided by the Owner's designated representative.

1.3.18 Work by Owner

The following materials and services will be provided by the Owner:

1. Any required civil work, grubbing, clearing, excavation and backfill.
2. Inspection and verification of adequacy of all foundations and concrete slabs for support of structures and equipment, including furnishing of all anchor bolts, embedded plates or items to meet the Contractor's requirements.
3. All wiring external to the equipment.
4. 4160 volt switchgear for large motors.
5. Electrical grounding connections between Contractor furnished equipment and structures and the plant's grounding grid.

1.2 Codes and Standards

All Bucket Wheel Type Stacker-Reclaimer equipment and appurtenance shall be manufactured in accordance with the following Codes and Standards, including all amendments in effect at time of purchase order placement.

These codes and standards set forth-minimum requirements necessary to assure satisfactory performance of the Contractor's equipment. Other internationally recognized codes and standards will be acceptable provided they meet or exceed the requirements of codes and standards. If different from list, Contractor shall submit for Owner's approval, details of the codes and standards, which Contractor proposes to use. Contractor shall demonstrate to the satisfaction of Owner that these codes and standards meet or exceed the requirements of the codes and standards listed.

The equipment shall meet and satisfy all applicable requirements of pertinent federal, state and municipal laws, regulations, codes, standards and ordinances.

The Contractor shall provide a list of codes and standards used for the manufacture of Contractor's products that are in effect at the time of purchase order.



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ATTACHMENT L

BUCKET WHEEL STACKER RECLAIMERS' MINISPEC AND RFQ

In the event of any apparent conflict between the applicable codes and standards and this specification, the Contractor shall refer the conflict to the Owner's designated representative for written resolution.

1.2.1	AFBMA	Anti-Friction Bearing Manufacturers Association
1.2.2	AGMA	American Gear Manufacturers Association
1.2.3	AISC	American Institute of Steel Construction
1.2.4	AISI	American Iron and Steel Institute
1.2.5	ANSI	American National Standards Institute
1.2.6	API	American Petroleum Institute
1.2.7	ASCE	American Society of Civil Engineers
1.2.8	ASME	American Society of Mechanical Engineers
1.2.9	ASTM	American Society for Testing and Materials
1.2.10	AWS	American Welding Society
1.2.11	BOCA	Building Officials & Code Administration International, Inc.
1.2.12	CEMA	Conveyor Equipment Manufacturers Association
1.2.13	CFR	Code of Federal Regulations
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1.2.21	NACE	National Association of Corrosion Engineers
1.2.22	NEC	National Electrical Code
1.2.23	NESC	National Electric Safety Code
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1.2.25	NFPA	National Fire Protection Association



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BUCKET WHEEL STACKER RECLAIMERS' MINISPEC AND RFQ

1.2.26	NPTA	National Power Transmission Association
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1.2.28	PFI	Pipe Fabrication Institute
1.2.29	RMA	Rubber Manufacturers Association
1.2.31	UBC/IBC	Uniform Building Code/International Building Code and Applicable Local Building Codes
1.2.32	SSPC	The Society for Protective Coatings
1.2.33	UL	Underwriters Laboratory



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ATTACHMENT L

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Quality Assurance requirements shall be in accordance with the provisions of the subcontract documents and as specified in this specification. The Contractor is directly responsible for the quality of the Work.

The Contractor shall provide a Quality Program or System, which is structured so that all aspects of quality are defined and verified for all items within Contractor's scope.

Field quality assurance and quality control procedures shall be submitted to the Owner's designated representative for review before work commences.

The Contractor shall submit resumes and qualifications for the proposed quality control staff to the Owner for review.



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ATTACHMENT N

BUCKET WHEEL STACKER RECLAIMERS' ERECTION MINISPEC

August 24, 2007
Mr. James M. Kelly, P.E.
Washington Group International Inc.
510 Carnegie Center
Princeton, NJ 08543
Subject: **Tampa Electric – Big Bend Power Station
Bucket Wheel Stacker Reclaimers
Metso Minerals Reference No. W89639**

Dear Kelly:

Metso Minerals is pleased to present budget pricing for the two (2) Bucketwheel Stacker Reclaimers as per your request.

**(2) BUCKETWHEEL STACKER RECLAIMERS with 125'0 boom
Nine Million Dollars US
(\$9,000,000)***

The above pricing is based on the following information:

4000 TPH Stackout / 4000 TPH Reclaimer.

Material: Bituminous Coal

Clarifications

- Site grading and soil stabilization is by others.
- Ballasted type berm, rails and connecting ties that can be used for supporting conveyors are by others.
- Takeaway conveyors are not included.
- Power supply to midpoint of machine travel is by others.
- Erection by others – additional data below on cost.

The budget pricing is current pricing and escalation should be factored into the price. The budget pricing has a variance of +/-15%.

This includes the structural, mechanical, electrical controls for the system. Taxes and duties are not included.

* Note – the above price contains \$2,000,000 USD + of materials from the PRC dollarized at 7.75 CNY to 1USD. In the event the CNY varies to the USD, we reserve the right to review and adjust accordingly.

James M. Kelly, P.E. Page No. 2

Washington Group Int'l August 24, 2007

This is not a binding offer. The price validity is for thirty days. Based on the current situation regarding fabrication shops, wherein shops are extremely busy, Metso reserves the right to revise price and schedule for the project to reflect the situation at time of contract award.

We have also attached a drawing of a similar machine for your review. This is typical of the machine that we provide to the industry today.

Spares for startup

are included in the budget pricing. The price is also calculated as F.O.B.



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BUCKET WHEEL STACKER RECLAIMERS' ERECTION MINISPEC

jobsite.

The schedule for the machine is outlined below. These dates are typical for this style machine. If need be, the schedule could be accelerated.

After NTP:

Engineering 4 – 5 months

Fabrication 8 – 10 months

Delivery 12 – 15 months

The erection of the machine would be another 5 months after delivery. For an erection budget cost we use 50%60%of the supply cost.

Should you require any additional information, please feel free to contact me at 4122695137.

Sincerely,

METSO MINERALS INDUSTRIES, INC.

Thomas W. Lippencott

Sales Manager

Minerals Processing

TWL:dsc

Attachment

W89639



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ATTACHMENT N

BUCKET WHEEL STACKER RECLAIMERS' ERECTION MINISPEC

From: Ulrich Pahl [ulrich.pahl@thyssenkrupp.com]
Sent: Friday, September 07, 2007 6:14 PM
To: Kelly, James
Subject: TECO Big Bend Station; Budgetary Prices for (1) CSU; (2) BWSR; WGI #28975-001

Attachments: CSU Reached Site 231105.jpg; CSU final erected.jpg; CIMG6024.jpg; CIMG5685.jpg; WG TECO-SUL.PDF; WG TECO-BWSR.PDF

Dear Mr. Kelly,

In support of Washington Group preparing a Study for TECO to up-grade the Coal Handling System at the Big Bend Station, we are pleased to submit herewith our Budgetary Supply and Erection cost for:

- a.. Continuous Ship Unloaders (CSU), and
- b.. Bucket Wheel Stacker/Reclaimers (BWSR)

Please note that TKRI (ThyssenKrupp Robins, Inc.) has to deviate from the WG Specifications by proposing two (2) CSUs and not only one unit. The reason is the following: The specified unloading capacity of 4,000 tph is interpreted to be the "Normal Capacity" which is typically 10% less than the "Peak Capacity". This is in our past experience of over 30 years a very high unloading rate for a single machine of this kind; in similar cases our clients had opted for splitting this rate between two CSUs, this not only provides redundancy at 50% capacity should one machine be out of service, but also allows simultaneous unloading of a coal carrying ship, cutting the time at the dock significantly.

Both CSUs are proposed on a roll-on / roll-off basis; this would allow TECO to operate its pier with the least interference during construction time: The CSUs would be delivered completely erected (minus the counterweights).

The pier is a very crowded area and for the sake of safety and efficiency TKRI suggests opting for this type of delivery. The coal yard, on the other hand, is a wider area, away from the water; here we suggest using conventional construction methods for the two BWSRs.

For illustration we attached photos and GA drawings:



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BUCKET WHEEL STACKER RECLAIMERS' ERECTION MINISPEC

- a.. Two completely shop assembled CSUs are ready for the ocean voyage as roll-on / roll-off cargo to a client's power plant
- b.. One of the CSUs has been successfully installed
- c.. A CSU is positioned over a ship's hatch
- d.. A CSU is unloading a ship
- e.. GA drawing of a typical CSU
- f.. GA drawing of a typical BWSR

In detail:

**a.. TKRI is proposing the supply of (2) CSUs
(60,000DWT; 2,000 tph/each), roll-on / roll-off for: \$32,800,000**

The delivery time after acceptance of an order amounts to approximately: 30 ... 35 Months

**a.. TKRI is proposing the supply of (2) BWSRs
w. field wiring material; 4,000 tph/4,000 tph for: \$17,550,000**

The delivery time after acceptance of an order amounts to approximately: 28 ... 32 Months

a.. As a guideline, TKRI suggests allowing for erection costs for both BWSRs a cost adder of approx. 35%, amounting to: \$ 6,200,000

Provided that both machines would be constructed concurrently, the erection would require approximately: 6 ... 8 Months

The above budgetary Sell Prices are for information only and are submitted for accounting purposes only; they do not represent stand-alone sell prices.

TKRI site advisors can be made available; current per-diem rates shall apply at the time when the job site is active.

We thank you for your interest in ThyssenKrupp Robins, Inc. as a potential supplier for this valued project.

Kind regards,

ThyssenKrupp Robins, Inc.

Ulrich Pahl



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Coal Field Study - Phase II Report

ATTACHMENT N

BUCKET WHEEL STACKER RECLAIMERS' ERECTION MINISPEC

Mgr. Estimating/Sales
7730 East Belleview Ave., Suite 404
Greenwood Village, CO 80111-5820
E-mail: ulrich.pahl@thyssenkrupp.com

Phone: (303) 793-2621

(303) 770-0808 (switch board)

Fax: (303) 770-4522

Please visit our Web Site at <http://www.thyssenkruppobins.com>

Confidential

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 Washington Group International	Big Bend Coal Yard Equipment Upgrade Bucket Wheel Stacker Reclaimer	Project No.: 28975-001 Specification No.: 15-6-705M Revision: C
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TAMPA ELECTRIC COMPANY

BIG BEND POWER STATION

PROJECT NUMBER 28975-001

COAL FIELD STUDY – PHASE II

BUCKET WHEEL STACKER RECLAIMER ERECTION MINISPEC

Specification No. 15-6-705M

Prepared for



August 2007

Washington Group International, Inc.
Building 510 Carnegie Center
Princeton, New Jersey 08540-5287

Revision C

Status: Budgetary Pricing Issue


 Washington Group International	Big Bend Coal Yard Equipment Upgrade Bucket Wheel Stacker Reclaimer	Project No.: 28975-001 Specification No.: 15-6-705M Revision: C
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Section		Page
1.1	Scope of Work	2
1.2	Codes and Standards	8
1.3	Quality Assurance and Quality Control.....	11

ATTACHMENTS

ATTACHMENT A – Bidding Drawings / Photographs

<u>Drawing Number</u>	<u>Title</u>
11473-FM-3B-5	Existing Bucket Wheel Stacker Reclaimer and Yard Conveyor Arrangement Drawing
11473-1241-176	Existng Bucket Wheel Stacker Reclaimer General Arrangement Drawing
Photograph	Existing Bucket Wheel Stacker Reclaimer
89639-0-001	Metso Minerals Bucket Wheel Stacker Reclaimer General Arrangement



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ATTACHMENT N

BUCKET WHEEL STACKER RECLAIMERS' ERECTION MINISPEC AND RFQ

1.11 1.0 Scope of Work

GENERAL

This specification and its attachments cover the installation and erection of two (2) Bucket Wheel Stacker Reclaimers at Tampa Electric Company's Big Bend Station.

It is not the Owner's intent to specify all technical requirements, nor to set forth those requirements covered by applicable codes and standards. The Contractor's product shall meet the requirements of this specification and the applicable industry standards.

The Two (2) Bucket Wheel Stacker Reclaimers will replace the following equipment:

- One (1) traveling tripper-stacker presently serving the north coal yard coal pile
- One (1) traveling bucket wheel stacker reclaimer presently serving the south coal yard coal pile

The Bucket Wheel Stacker Reclaimers will each have a stackout capacity of 4,000 TPH and reclaim capacity of 4,000 TPH

The Bucket Wheel Stacker reclaimers will be designed to provide safe and reliable service based on 24 x 7 x 365 operation for a duty service life of 20 years.

BUDGETARY PRICING REQUEST

The Contractor shall submit budgetary quotations to +/- 15% accuracy for the following:

- Install and erect two (2) 4,000 TPH stacking capacity and 4,000 TPH reclaiming capacity Bucket Wheel Stacker Reclaimers in accordance with the detailed requirements further defined herein.



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BUCKET WHEEL STACKER RECLAIMERS' ERECTION MINISPEC AND RFQ

1.3.1 Work by Contractor

The Contractor shall erect each machine comprised of the following:

1. A rotating wheel with cell-less digging buckets. The wheel shall be balanced, rigid welded steel plate construction, designed for heavy duty.
2. A bucket wheel boom of rigid welded steel plate construction, designed for heavy duty. All hydraulic systems and components required to raise and lower the boom.
3. A reversing, pivoted 72" wide boom belt conveyor, 110'-0" between drive and tail pulley centers, which shall operate at a maximum angle of incline/decline of +12/-12 degrees. The boom belt conveyor shall be complete and include all pulley assemblies, speed switches, pulley scrapers, belt cleaners, complete drive including motor, take-up, 6" dia. carrying and return idler rolls, hood covers, chutes and loading skirts, curved wind guards, and complete structural steel supports, including deck plate, double walkways with handrail and nylon covered pull cords and pull switches along both sides of the conveyor for emergency shutdown.
4. A supporting mast and rear counterweight structure, counterweight, including rebar, tie rods and steel shell. (Concrete will be supplied by the Owner).
5. A boom slewing drive and platform for support of above.
6. A gantry structure with rail traveling mechanism. The gantry structure shall consist of a rigid ring type girder with four (4) legs with each leg supported on a travel wheel group each with eight (8) travel wheels. Sixteen (16) of the thirty two (32) wheels will be driven by eight (8) electric motor drive arrangements. An equalizing system shall be provided to accommodate uneven track.
7. A tripper trailer section including bifurcated chutework and motor operated diverter gate to facilitate the selection of splitting or bypassing the flow of coal back to the yard conveyor or onto the boom conveyor for stackout.
8. All greasing and lubrication systems.
9. All complete motor drives.



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BUCKET WHEEL STACKER RECLAIMERS' ERECTION MINISPEC AND RFQ

10. All required electrical equipment including but not limited to, step down transformers, , motor control centers, power centers, power and control cable, cable reels, switches, sensing devices, plug chute switches and lighting equipment.
11. An electrical room/enclosure, located at a low elevation on the machine structure, to house the transformers, MCC's and power centers.
12. An Allen Bradley PLC based control system to provide completely automated control or a combination of automatic/manual control through a user friendly MMI on screen interface. A data link shall be provided to the plant communication system for monitoring. All communications from the reclaimer to the plant control system shall be via radio.
13. An elevated operator's cab, ergonomically designed with wraparound windows, suitable illumination, heating, and air-conditioning systems.
14. High density TV cameras suitably located to allow observation of all operations and functions from the control cab.
15. Adequate access to all equipment, including stairs, ladders, walkways, platforms, and handrails.
16. Suitable guards for tail pulleys and take-ups.
17. Hurricane tie-downs and rail clamps.
18. Anemometer, annunciator, and alarms.
19. Instrument installation materials including instrument tubing, piping, air distribution piping and heat tracing.
20. Weld procedures and procedure qualifications, welder qualifications; weld acceptance criteria and NDE procedures.
21. Certified Material Test Reports (CMTR) of physical/chemical properties for all structural steel materials.
22. Electrical grounding connections, between Sellers furnished equipment and Seller furnished structures.

E. Services

Services performed by the Contractor shall include, but shall not be limited to, the following:



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BUCKET WHEEL STACKER RECLAIMERS' ERECTION MINISPEC AND RFQ

6. Erection and installation labor
23. Labor supervision
24. Receiving, unloading, sorting, and hauling of the material and equipment from delivery point to storage area and from storage area to point of erection. The Contractor shall assume all responsibility for care and protection from unloading through erection.
25. Receipt of all shipments at the jobsite, specifically including a determination that each shipment is complete in accordance with the shipping list and that each component is undamaged. The Contractor shall promptly unload all equipment received at the jobsite. Unloading shall be conducted utilizing proper supervision and unloading equipment and observing all handling instructions indicated on the shipping containers.
26. Unload and store all tools and spare parts furnished with the equipment. Any tools furnished with the equipment and used for erection purposes shall be cleaned and reconditioned before being returned to the Owner.
27. Weather protection, including temporary heat, if required for protection of equipment in storage, or erected, and also as required for the proper continuance of erection, until the installation is accepted by the Owner for operation.
28. Furnish any temporary buildings or structures required for the Contractor's work including office change house, sanitary, storage, all interior partitions, shelves, bins, blueprint racks, file cabinets, office furniture, telephone, and any heating or wiring as may be required by the Contractor.
29. All materials, equipment and tools required by the Contractor for the installation of the bucket wheel stacker reclaimers shall be cleared through the Owner's receiving warehouse both on entrance to and egress from the project site.
30. Labor for start-up inspection and miscellaneous start-up work during preliminary operation.
31. Labor for final alignment of equipment, training of loaded belts while handling coal, and testing of coal handling equipment.
32. All rigging equipment shall be furnished by the Contractor and shall be tested prior to actual use in accordance with applicable ANSI and OSHA requirements. Contractor's lifts over 25 tons shall be designed by an engineer



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BUCKET WHEEL STACKER RECLAIMERS' ERECTION MINISPEC AND RFQ

licensed in the state of Florida and submitted for review to the Owner's designated representative.

33. The Contractor shall be responsible for all engineering calculations related to the selection of lifting and rigging equipment, design of temporary steel, design and arrangement of scaffolding, design of temporary attachments to existing plant components, and design of miscellaneous steel used for rigging. All such calculations shall be sealed by a Professional Engineer registered in the State of Florida and shall be subject to review by the Owner's designated representative.
34. All required construction scaffolding, temporary stairs, floors, ladders, platforms and railings shall be furnished by the Contractor and shall be designed, erected, and used in accordance with the requirements of the Occupational Safety and Health Administration (OSHA).
35. All cranes/lifting devices, heavy rigging, including hoisting engines, cable, and cable blocks shall be furnished by the Contractor and shall be inspected daily by Contractor's and Owner's designated Safety Representatives prior to being put in service. Any crane/lifting device not found to be in a safe condition shall be marked and removed from the site. If a ring crane is required to erect the machines it shall be furnished by the Contractor.
36. All light rigging such as air hoists, rope, rope blocks, and chain hoists shall be furnished by the Contractor.
37. The Contractor shall provide and place all crane mats required to complete the work..
38. The Contractor shall submit for the Owner's review the detailed hoisting and rigging procedures that he plans to implement in the execution of the work.
39. The Contractor shall complete and submit a "Lifting Permit" to the Owner's designated representative for lifts over 25 tons net hook load. No lift shall start without Owner's designated representative's prior review of Contractor's Lifting Permit.
40. The Contractor will be provided with 480 volt power in the vicinity of each work area. It shall be the Contractor's responsibility to step down this power source and provide the cabling as required to extend power from these distribution centers to each point of use. The Contractor shall identify their specific power requirements in each area prior to mobilization.



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BUCKET WHEEL STACKER RECLAIMERS' ERECTION MINISPEC AND RFQ

41. The Contractor shall furnish all required office / change trailers, tools, office supplies, communications, consumables, sanitary facilities, on-site waste disposal to containers provided by the Owner. Portable toilets shall be of the chemically treated type obscured from public view and properly maintained. Sanitary facilities in trailers and other temporary structures shall be equipped with holding tanks or shall temporarily be connected to the permanent sewer system at a location provided by the Owner's designated representative.

1.3.2 Work by Owner

- F. The following materials and services will be provided by the Owner:
 7. Any required civil work, grubbing, clearing, excavation and backfill.
 8. Inspection and verification of adequacy of all foundations and concrete slabs for support of structures and equipment, including furnishing of all anchor bolts, embedded plates or items to meet the Contractor's requirements.
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BUCKET WHEEL STACKER RECLAIMERS' ERECTION MINISPEC AND RFQ

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BUCKET WHEEL STACKER RECLAIMERS' ERECTION MINISPEC AND RFQ

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BUCKET WHEEL STACKER RECLAIMERS' ERECTION MINISPEC AND RFQ

- 1.13 Quality Assurance and Quality Control
 - 1.3.1 Quality Assurance requirements shall be in accordance with the provisions of the subcontract documents and as specified in this specification. The Contractor is directly responsible for the quality of the Work.
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 - 1.3.4 The Contractor shall submit resumes and qualifications for the proposed quality control staff to the Owner for review.



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ATTACHMENT P

BUCKET WHEEL STACKER RECLAIMERS' ERECTION BUDGETARY PROPOSALS

From: Wilbur Allen [wallen@cmw.cc]
Sent: Monday, October 15, 2007 9:56 AM
To: Kelly, James
Subject: Teco Coal Yard stacker/ Reclaimers

Jim, sorry this estimate took this long, but the records of the last Stacker Reclaimer we erected at the Progress Energy, Crystal River, South Coal Yard Project were difficult to locate. Based on the weights and our past records we would estimate an erection price of approx. \$2,000,000.00 to \$2,400,000.00 each to unload, place in storage, erect and provide labor and equipment to check out the machines. An erection period for one machine would be approx. 6 months and should the two machines be available to erect at one time it would lower the pricing and shorten the overall duration for the machines. This estimate contains all necessary items for erection other than Electrical, Painting and Florida sales tax should it apply. Should you have questions please notify.

Thanks for the opportunity of pricing this project.

Best Regards,

Wilbur Allen
General Manager
Central Maintenance & Welding, Inc.
2620 East Keyville Road
Lithia, FL 33547
813-737-1402 Office
813-690-8684 Cell

MessageFrom: Jim Hermann [hermannj@ticus.com]
Sent: Tuesday, October 02, 2007 9:47 AM



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ATTACHMENT P

BUCKET WHEEL STACKER RECLAIMERS' ERECTION BUDGETARY PROPOSALS

To: Kelly, James
Cc: muird@ticus.com; keary@ticus.com
Subject: RE: Tampa Electric, Big Bend - Metso Bucket Wheel Stacker Reclaimer Weight Breakdown

Jim,
Based on the information you have provided, TIC estimates a current cost (today's dollars, unescalated for future years) of \$1,200,000 for each Bucket Wheel Stacker/Reclaimer. This includes an allowance of \$50,000 for 5 belt splices and assumes all first fills of oil and greases are provided by others and that commissioning, checkout and start-up are performed on a T&M basis. Please do not hesitate to contact me if you have any questions.

Jim Hermann
TICSE Manager of Estimating
Phone: 678-455-8300
Fax: 678-455-8304

-----Original Message-----

From: Kelly, James [mailto:James.Kelly@wgint.com]
Sent: Wednesday, September 26, 2007 8:14 AM
To: Hermann, James
Cc: Patel, Yogesh (TECO); Visbisky, Robert (TECO); Rizzi, Ray
Subject: Tampa Electric, Big Bend - Metso Bucket Wheel Stacker Reclaimer Weight Breakdown

Jim,

As you requested, attached is a pdf file received from Metso with the subject BWSR shipping weights breakdown, counterweight and total machine weights. Please call or email me if you have any other questions.

Regards,

Jim Kelly

<<METSO BWSR Weights and Shipping Pieces.pdf>>

James M. Kelly, P.E.
Consulting Engineer
Washington Group International Inc.
510 Carnegie Center
Princeton, NJ 08543



28975-001
Rev P0

Coal Field Study - Phase II Report

ATTACHMENT P

BUCKET WHEEL STACKER RECLAIMERS' ERECTION BUDGETARY PROPOSALS

office: 609.720.3604
fax: 609.720.2384
cell: 609.712.5611
email: james.kelly@wgint.com

Coal Field Study - Phase II Report

ATTACHMENT Q

ELECTRICAL AND CONTROLS BUDGETARY PRICING



EMERSON[™]
Process Management

Emerson Process Management
Power & Water Solutions
200 Beta Drive
Pittsburgh, PA 15238
Tel 1 (412) 963-4000

June 27, 2007

Washington Group International
510 Carnegie Center
P.O. Box 5287, Mail Stop 04P2
Princeton, NJ 08543-5287

Attention: Robert Kurilla, P.E.
Supervising I&C Engineer

Subject: TECO – Big Bend 3 – Coal Handling System Upgrade
Emerson Process Management Power & Water Solutions Offer No. PC0706220

Dear Mr. Kurilla:

Emerson Process Management Power & Water Solutions, Inc. (Emerson) is pleased to submit this budgetary offer to Washington Group International for the TECO – Big Bend 3 – Coal Handling System Upgrade project. We are submitting one electronic copy of our offer for your review. This offer is based upon the attached commercial description and the Bill of Material within this submittal.

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Emerson can help TECO – Big Bend maintain its optimization goals through our industry-leading performance solutions, years of experience in the design and implementation of advanced control technologies, and, most importantly, a long list of successful jobs, much like this project. Below are a few proven results that have helped customers like you and TECO achieve continuous process improvement:

- Improved plant reliability and availability by 20%
- Reduced equipment wear by 10%
- Completed plant testing and startup 3 months ahead of schedule
- Contributed to error-free plant startup
- Increased reliability through use of embedded tools and proven library of advanced applications

With industry-specific applications, unmatched experience, and a highly skilled team of engineers, Emerson looks forward to working with WGI to achieve the highest levels of success for the TECO – Big Bend 3 – Coal Handling System Upgrade project.

Thank you for the opportunity to submit this budgetary offer. If you should have any questions or require additional information, please feel free to contact your local representative, Ben Nangle at 610-431-0958, or me at 412-963-3795.

Very truly yours,
Emerson Process Management
Power & Water Solutions, Inc.

David J. Anselm, P.E.
Senior Application Engineer

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ELECTRICAL AND CONTROLS BUDGETARY PRICING

7.0 COMMERCIAL DESCRIPTION FOR THE TECO – BIG BEND 3 – COAL HANDLING SYSTEM

8.0

This document defines the commercial basis under which Emerson makes this offer to Washington Group International for the TECO – Big Bend 3 – Coal Handling System Upgrade project.

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<p>9.0 TERMS AND CONDITIONS</p>	<p>The terms and conditions for any work performed as a result of this offer shall be those terms and conditions set forth in Selling Policy WE-COM-SP-10B and the Software License Agreement, as included with this offer.</p>
<p>11.0 PRICING</p>	<p>10.0 The price for this system as offered is \$ 275,000.00. Delivery shall be FOB origin. Freight and handling charges shall be added.</p>
<p>13.0 WARRANTY</p>	<p>12.0 Emerson's standard warranty is 18 months from shipment or 12 months from system commissioning; whichever occurs first.</p>
<p>15.0 TERMS OF PAYMENT</p>	<p>14.0 Emerson Process Management would like to work with you in developing a mutually agreeable milestone payment schedule. A typical payment schedule is shown below. Invoices will be issued for each of the following deliverable line items with payment due net 30 days from the date of the invoice. The amount of each invoice shall be calculated by applying the percentages (%) shown below against the total Purchase Order price including any changes. 10% Upon Contract Award 20% Upon Initial DCS Hardware Drawings Submittal</p>

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	45% Upon DCS Hardware Complete on the Test Floor 20% Upon System Shipment (on pro rata basis) 5% Upon Customer Acceptance (but in any event not later than 90 days after last major product shipment)
17.0 DELIVERY	16.0 Emerson will deliver the offered system in 24 – 28 weeks after receipt of a Purchase Order.
19.0 BID VALIDITY	18.0 This offer shall remain valid for ninety (90) days from the date of this letter, unless otherwise extended, modified, or withdrawn in writing by Emerson. The return of a purchase order or any other reasonable manner of acceptance communicated to Emerson during such validity period will be sufficient to form an agreement on the terms and conditions of this offer.
21.0 PROPRIETARY INFORMATION	20.0 This offer and any subsequent communications relative to this offer are considered to be proprietary information of Emerson. Accordingly, please do not publish, use, reproduce, transmit, or disclose to others outside your organization any information contained in this offer without prior written consent by Emerson.
	22.0

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WGI Tampa Electric 072307

Item	Product ID	Description	Device ID	Qty	Delivery	Ship Wt	DS	PGC	List Price	Multiplier	Each	Extended Net
20 HP PF70 VFD												
1	21AD034D3AYNAND0MNNH-D-B5-C1-J2-J4-N2-N3-P4-S1-S9-S10	PowerFlex70 AC Configured Drive, 480 VAC, 3 PH (D) 34 Amps (034), 20 HP Heavy Duty, IP65 / NEMA 4 Indoor (D), LCD Display, Full Numeric Keypad (3), Brake IGBT Installed (Y), Without Drive Mounted Brake Resistor (N), Second Environment Filter per CE EMC directive (89/336/EEC) (A), No Communication Module (N), Enhanced Control 115VAC Basic I/O (D), Enhanced Control, without Encoder (0)										
	12	N/A										\$ 7,227.50 \$ 86,730.00

10:1 Turn Down Motor

2	CM190-HB020H18XAH-5562	3/60/460 VAC, 1800 RPM, CT 10:1, Class F Insul, TEFC-XE, 324T, Explosion Proof Div 1, Class 1, Group D, Class 2, Groups E, F & G, T3C Temp Code										
	12	N/A										\$ 4,191.00 \$ 50,292.00

Optional 4:1 Turn Down Motor

3	CM190-KB020H18XAH-5561	3/60/460 VAC, 1800 RPM, CT 4:1, Class F Insul, TEFC-XE, 286T, Explosion Proof Div 1, Class 1, Group D, Class 2, Groups E, F & G, T3C Temp Code										
	12	N/A										\$ 3,189.00 \$ 38,268.00

Total Weight: 0 kg Grand Total (US): \$ 175,290.00

(NOTE: Total weight excludes items marked N/A)

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ELECTRICAL AND CONTROLS BUDGETARY PRICING

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ELECTRICAL AND CONTROLS BUDGETARY PRICING

Product Details

Product: 21AD034D3AYVAND0NNIN-HD-B5-C1-J2-J4-N2-N3-P4-S1-S9-S10

Description: PowerFlex 70 AC Configured Drive, 480 VAC, 3 PH (D), 34 Amps (034), 20 HP Heavy Duty, IP65 / NEMA 4 Indoor (D), LCD Display, Full Numeric Keypad (3), Brake IGBT Installed (Y), Without Drive Mounted Brake Resistor (N), Second Environment Filter per C.E EMC directive (89/336/EEC) (A), No Communication Module (N), Enhanced Control 115VAC Basic I/O (D), Enhanced Control, without Encoder (0)

BASE DRIVE INFORMATION

Input Voltage	480 VAC, 3 PH (D)
Drive Duty Cycle	Heavy Duty Cycle (HD)
Current Rating	34 Amps (034)
Enclosure	IP65 / NEMA 4 Indoor (D)
Frame Size	Frame Size D
Output Current Information	Output Amps: 34A Cont. 40.5A 1 Min, 54A 3 Sec.
Please Note:	Any photos in this documentation are representative of the products supplied and may not be that of the actual unit shipping

INSTALLED OPTIONS

Human Interface Module	LCD Display, Full Numeric Keypad (3)
Documentation	User Manual (A)
Brake IGBT	Brake IGBT Installed (Y)
Brake Resistor	Without Drive Mounted Brake Resistor (N)
Filter Options	Second Environment Filter per C.E EMC directive (89/336/EEC) (A)
Internal Communication Module	No Communication Module (N)
Control and I/O	Enhanced Control 115VAC Basic I/O (D)
Feedback option	Enhanced Control, without Encoder (0)

SYSTEM OPTIONS

Bypass Options	Manual Bypass using 800F line (B5)
Input Power Devices	Drive/Bypass Mode Circuit Breaker (P4)
Control Power	Control Power for program options only (-C1)
Operator Devices	800F Hand/Off/Auto S.S. (Start/Stop/Speed Ref) (-S1)
	800F Run P.L. (S9)
Control Interface	PA 03022001F01 P.L. (-S10)
	Drive Fault Aux. Contact (-J2)
	Drive Run Aux. Contact (-J4)
System Feedback	Isolated Analog Input - 4-20mA (-N2)
	Isolated Analog Output - 0-10VDC (-N3)

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ELECTRICAL AND CONTROLS BUDGETARY PRICING

Jim;

Budgetary Cost is \$111,000.00.

Should there be any questions, do not hesitate to contact me.

Sincerely,

Robert G. Kurilla, P.E.
Supervising I&C Engineer

Washington Group International
510 Carnegie Center
P.O. Box 5287
Mail Stop 04P2
Princeton, NJ 08543-5287
Ph.: 609.720.2533
Fax.: 609.720.3303
e-mail: bob.kurilla@wgint.com

From: GEB22@aol.com [mailto:GEB22@aol.com]
Sent: Wednesday, August 08, 2007 3:15 PM
To: Kurilla, Robert
Subject: Tampa Electric - Big Bend

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ELECTRICAL AND CONTROLS BUDGETARY PRICING

Bob,

Our budget cost to replace the existing A888-M370 with an updated system consisting of the same functions plus more spares would be approx. \$111,000.00. Before going ahead with this we would suggest that you have our service department check out all of the equipment on this system to see if all of the devices are operating properly. Our service would cost \$800/day/man plus expenses. This would be a two man job.

If you have any more questions please feel free to contact me.

Gene E Benzenberg
Alison Control Inc.
973-575-7100
www.alisoncontrol.com

Get a sneak peek of the all-new AOL.com.

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ELECTRICAL AND CONTROLS BUDGETARY PRICING

From: Ken Hardwick [mailto:khardwick@millerenergy.com]
Sent: Thursday, September 13, 2007 3:42 PM
To: Kurilla, Robert
Subject: Fwd: Coal Silo Level Measurement

Bob,

Siemens LR400, P/N 7ML5420-0CD0CC2, C11, Y15
Includes Hand Held Programmer

Price: \$3545.00 each

Add \$750.00 for remote mount Precision Digital XP Meter.

Thx and regards,

Ken H.

----- Forwarded message -----

From: Ken Hardwick <khardwick@millerenergy.com>
Date: Sep 13, 2007 12:01 PM
Subject: Coal Silo Level Measurement
To: Bob.Kurilla@wgint.com

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ELECTRICAL AND CONTROLS BUDGETARY PRICING

Hi Bob,

Magnetrol does not offer a continuous level transmitter that is designed for solids measurement. We would recommend the Siemens LR400 which has proven to be effective in this service. I have attached some Technical information for your review. Let me know if you need any additional information.

Thx and regards,

--

KEN HARDWICK
MILLER ENERGY, INC.
3200 SOUTH CLINTON AVE.
SOUTH PLAINFIELD, NJ 07080

PHONE: 908-755-6700

FAX: 908-755-0312

E-MAIL khardwick@millerenergy.com



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ATTACHMENT R

PRELIMINARY LEVEL 1 ENGINEERING / CONSTRUCTION SCHEDULE



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PRELIMINARY LEVEL 1 ENGINEERING / CONSTRUCTION SCHEDULE