Unavailability-Finding Request
for
Georgia Ports Authority

Date: May 3, 2017

Project Name: International Multi-Modal Connector Project

Supporting Documentation:

- Independent third-party selection-study regarding component – Please see the attached third-party selection study titled "Buy American Waiver Assessment for RMG intermodal Cranes for the International Multi-Modal Connector".
- Independent third-party selection-study regarding provider - The final provider will be selected as part of competitive bid process as described in the attached third-party selection study.

Project Intent: The Georgia Ports Authority (GPA) was recently awarded a Fostering Advancements in Shipping and Transportation for the Long-term Achievement of National Efficiencies, Significant Freight and Highway Projects (FASTLANE) Grant as part of the Fixing America's Surface Transportation (FAST) Act. This FASTLANE Grant-funded project will be administered by United States Maritime Administration (MARAD) and will increase intermodal capacity at the GPA's Garden City Terminal (GCT) in Garden City, Georgia. Once complete, on terminal rail operations for the two existing intermodal yards will be consolidated into a single facility, which will increase intermodal capacity and lessen the impact on the public by moving rail switching operations onto the terminal. The facility will be equipped with Rail Mounted Gantry (RMG) Cranes to allow the handling of up to 10,000-ft unit trains by two Class-I railroads at the GCT. This waiver request has been prepared for the RMG cranes.

Project Background: The project includes a series of improvements that are required to provide an increase in intermodal capacity that will accommodate increasing terminal throughput, while reducing rail traffic from the surrounding communities, reducing truck traffic from the highways, and reducing at-grade rail crossings. The primary container handling component of the project is the RMG cranes. These cranes will be equipped with the latest container handling technologies and will have the capability of handling approximately 20 boxes per hour. The cranes would have a clear span of approximately 175 feet capable of spanning 9 tracks and will have a single cantilever of approximately 70 feet. The cranes will be approximately 70 feet tall and be able to lift a ISO container to a safe working height over two intermodal boxes.

RMG Cranes: The consolidated facility will initially require the use of eight (8) RMG cranes. This waiver includes a procurement approach with alternatives to increase the level of American content.

Containerization / RMG Crane History:

The first non-ISO standardized containers were loaded onto a specialty modified ship for transport of the containers in 1956 by American Trucking entrepreneur Malcom McLean. The world's first use of a dedicated ship-to-shore (STS) container handling crane occurred in 1959 when American-based PACECO Corporation's Portainer container crane was utilized to load a vessel in Alameda, California. The STS crane was manufactured in America at Paceco's facility located in Gulfport, Mississippi. Initially PACECO Corporation was the world-leading supplier of STS cranes and container yard container (RTG) handling cranes. According to the magazine Containerization International's September 1981 issue, by the end of 1980, there were PACECO type operating in over 200 ports around the world. Today, Shanghai Zhenhua Port Machinery Company (ZPMC) is the world's leading supplier of container handling cranes. Please note that the STS gantry crane is a more consistent indicator of crane manufacturing versus tracking RMG cranes which can be used for multiple container handling purposes.

Today there are no major American based RMG crane manufactures that can compete with the World-wide leading foreign providers. These leading RMG crane providers are: Austrian-based Kuenz, China-based ZPMC (the world's largest producer of STS, RTG, and RMG container handling cranes), China-based SANY, China-based TCM, Finland-based Konecranes, Germany-based Kocks Cranes, Ireland-based Liebherr, PACECO licensees (Espana, Hyundai, and Mitsui), Swedish-based Kalmar Industries, South Korea-based Samsung, and Japanese-based Mitsubishi Heavy Industries and possibly others. There are approximately fifty (50) RMG intermodal cranes currently operating in North America and none of these were produced in the United States.

Innovative RMG Procurement Approach:

To encourage and maximize American participation while meeting the performance standards required for the RMGs, an innovative procurement approach that allows for full and open competitive bids is proposed. The Base Bid will allow competitive bids from leading World-wide foreign providers that provide the best value to the GPA and allows the contractors to determine the best product, whether domestic or foreign, to meet the performance specifications. The contractors will meet the Jones Act transportation requirement in the Base Bid.

An alternative bid request will be made from the contractor that utilizes the same Base Bid amount, but includes a strategy to increase the American participation in the manufacturing and delivery of the RMG cranes. The contractor will be asked to include an American participation percentage value to the project.

A Selection Committee will be established to review the bids. Evaluation will be based on the following: qualifications/experience, price, American percentage, crane loads, and payment terms.

Estimated Costs: The cranes for which the waiver is being requested amount to approximately $40M of the overall $126.7M project costs. The FASTLANE grant will support $44M of the total $126.7M project costs.

Cargo Preference: The Requester has complied / will comply with the Cargo Preference Act of 1954, as amended at 46 USC § 55305, and related Rules at 46 CFR part 381.

Finding of Unavailability: The undersigned hereby finds, consistent with the "Buy America Act," as amended at 23 USC § 313(b)(2), that the materials and products that are the subject of this request are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality for the purposes of this Project.

Submitted by:

_/s/___ Date: __May 3, 2017_____

Name: Christopher B. Novack, P.E.
Title: Senior Director of Engineering & Facilities Maintenance
Georgia Ports Authority

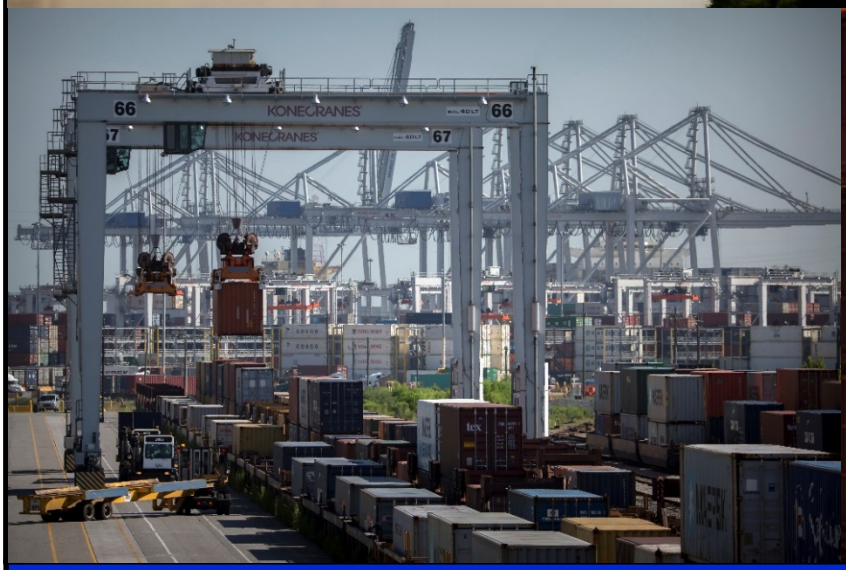
Buy America Waiver Assessment

RMG Intermodal Cranes

International Multi-Modal Connector

Georgia Ports Authority

May 3, 2017



RC Advisory Services, LLC

Buy America Waiver Assessment
RMG Intermodal Cranes - International Multi-Modal Connector
Georgia Ports Authority

May 3, 2017

Project Background:

The International Multi-Modal project by the Georgia Ports Authority (GPA) includes a series of improvements that are required to provide an increase in intermodal capacity at the Garden City Terminal (GCT) that will accommodate increasing terminal throughput, while reducing rail traffic from the surrounding communities, reducing truck traffic from the highways, and reducing at-grade rail crossings.

This will be achieved by consolidating the two existing intermodal yards that are not capable of accommodating unit trains into a single facility that will enable two Class-1 railroads to simultaneously handle 10,000-ft unit trains. The new multi-modal facility will be equipped with Rail Mounted Gantry (RMG) cranes to off-load and load ISO containers safely, productively, and efficiently from/to rail cars.

These cranes will be equipped with the latest container handling technologies and will have the capability of handling approximately 20 boxes per hour. The cranes would have a clear span of approximately 175 feet capable of spanning 9 tracks and will have a single cantilever of approximately 70 feet. The cranes will be approximately 70 feet tall and be able to lift a ISO container to a safe working height over two intermodal boxes.

The consolidated facility will initially require the use of eight (8) RMG cranes. Future expansion may require the addition of two (2) additional RMG cranes.

RMG Cranes:
Various RMG cranes have been utilized throughout history. At its simplest form, an RMG crane would consist of a simple horizontal support beam that is supported by vertical members with some mechanical means to lift an item vertically and is mounted on a rail as shown on the figure below.

Figure 1: RMG Schematic

Throughout history RMG cranes continue to be utilized to perform more difficult tasks, including the transition to fully automated remote controlled RMGs. This is especially true in the continuing process and automation improvements at most container terminals. There is no current standard, shape, or performance requirements of the state-of-the-practice RMG cranes for Intermodal rail facilities. Here are a few samples of recent RMG crane styles for some of the major Class-1 railroads.

Figure 2: Konecranes of Finland RMG Crane at Burlington Northern Intermodal Facility

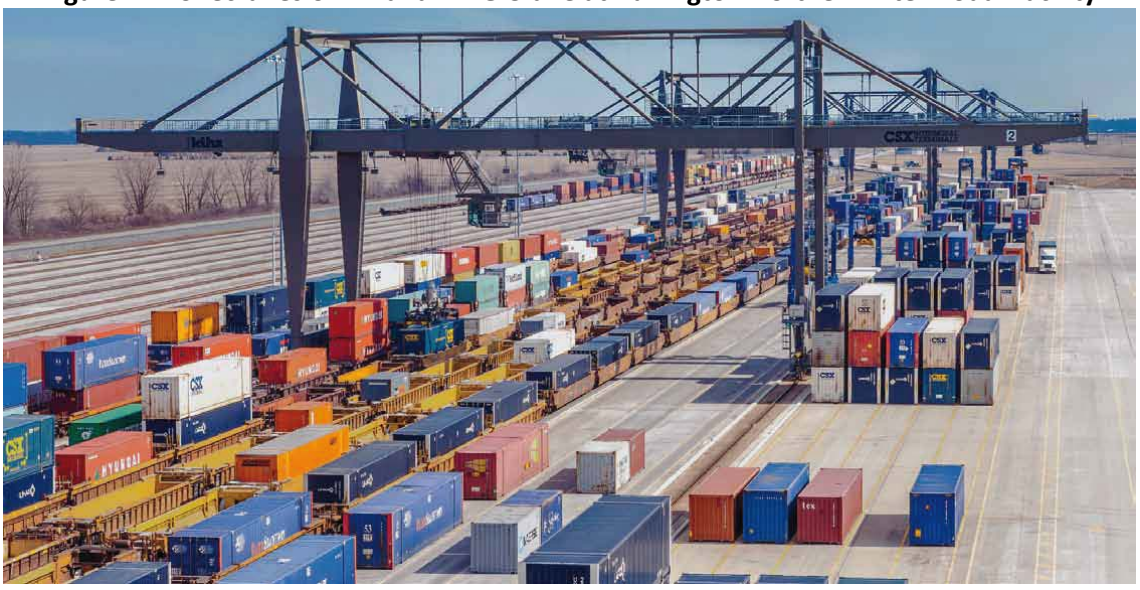


Figure 3: Kuenz of Germany RMG Crane at CSX's Northwest Ohio Intermodal Terminal

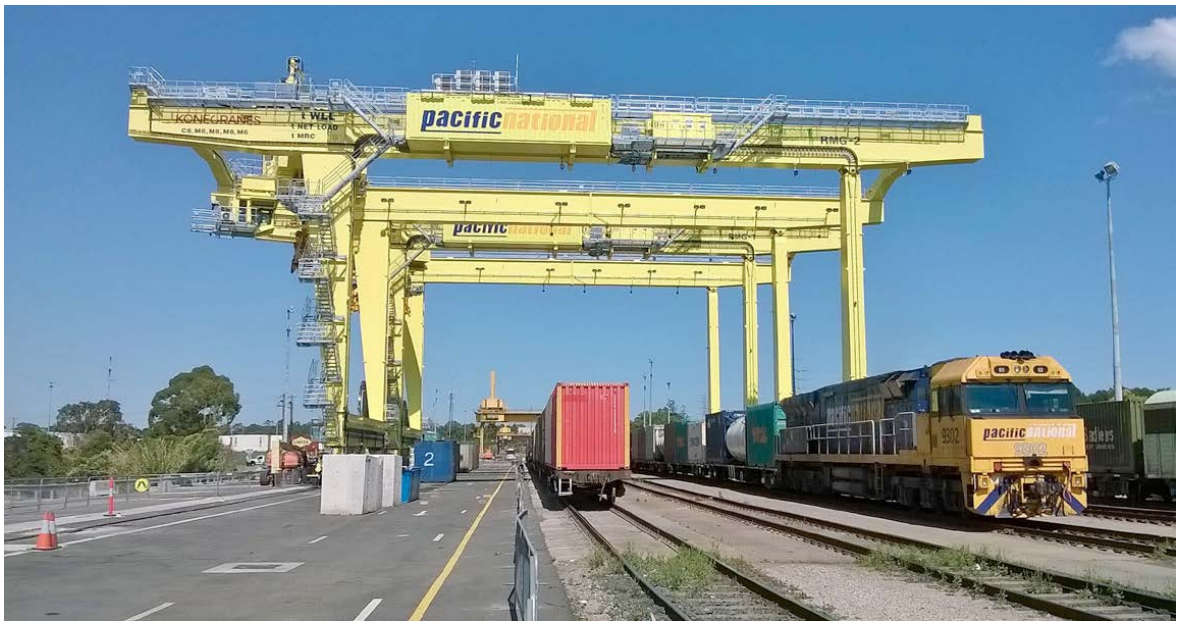


Figure 4: RMG Crane at Pacific National Sydney

As depicted above, currently there are no standard RMG cranes. Each has been designed and customized for each specific customer's requirements. Below is a schematic of the RMG proposed for the GPA's project:

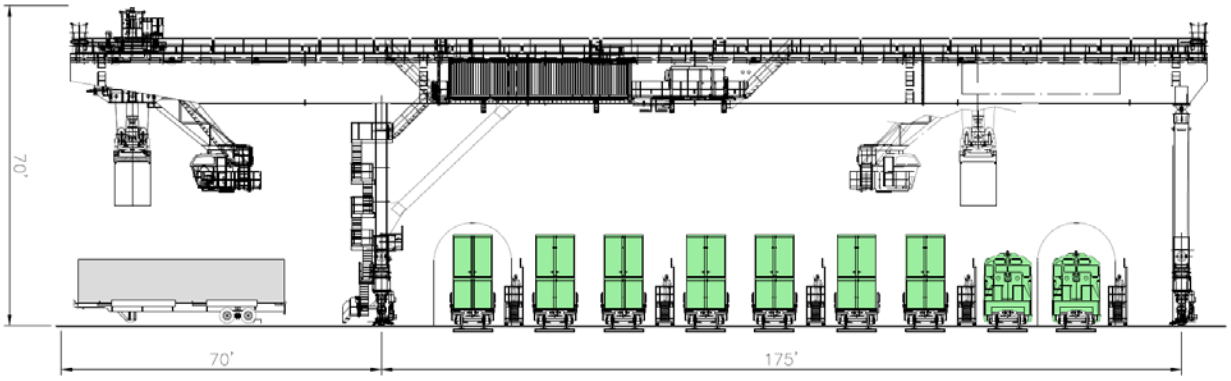


Figure 5: GPA RMG Crane Schematic

Containerization / RMG Crane History:

The first fifty-eight (58) non-ISO standardized containers were loaded onto a specialty modified ship for transport of the containers on April 26, 1956 by American Trucking entrepreneur Malcom McLean. The world's first use of a dedicated ship-to-shore (STS) container handling crane occurred on January 7, 1959 when the American based PACECO Corporation's Portainer container crane was utilized to load a vessel at Encinal Terminal in Alameda, California by Matson company. The STS crane was manufactured in America at Paceco's facility located in Gulfport, Mississippi. Initially PACECO Corporation was the world-leading supplier of STS cranes and container yard container (RTG) handling cranes. According to the magazine Containerization International's September 1981 issue, by the end of 1980, there were at least 737 ship-to-shore container handling cranes of the PACECO type operating in over 200 ports around the world. Of the 737 cranes listed, 283 were PACECO Portainer cranes. Due to increasing world demand for STS container cranes, PACECO Corp licensed Japanese-based Mitsui Engineering & Shipbuilding, Spain-based PACECO Espana, S.A., and South Korean-based Hyundai Heavy Industries. This was the initial cause for the decline in the American manufacturing of container handling cranes. The final cause occurred on October 7, 2013, when the Port of Miami received four (4) STS container cranes from Shanghai Zhenhua Port Machinery Company (ZPMC). Since the arrival of these four container cranes to the Port of Miami, ZPMC has grown to be the world's leading supplier of container handling cranes. Per World Cargo New' 23rd annual STS gantry crane survey, they identified references for 271 new STS cranes from their previous annual survey. Of the STS crane figure, ZPMC accounted for 222 or 82% of the market. Please note that the STS gantry crane is a more consistent indicator of crane manufacturing versus tracking RMG cranes which can be used for multiple container handling purposes, of which one is RMGs for intermodal rail facilities.

Today there are no major American based RMG gantry crane manufacturers that can compete with the World-wide leading foreign providers. These leading RMG crane providers are: Austrian-based Kuenz, China-based ZPMC (the world's largest producer of STS, RTG, and RMG container handling cranes), China-based SANY, China-based TCM, Finland-based Konecranes, Germany-based Kocks Cranes, Ireland-based Liebherr, PACECO licensees (Espana, Hyundai, and Mitsui), Swedish-based Kalmar Industries, South Korea-based Samsung, and Japanese-based Mitsubishi Heavy Industries and possibly others joining the growing RMG gantry crane manufacturers. There are approximately fifty (50) RMG cranes currently operating in North America. None of these were produced in the United States.

American Content:

It is evident that the major international foreign RMG suppliers prefer to provide as much content from their own countries if the Request for Proposal (RFP) does not otherwise specify. In general, most of the foreign RMG suppliers only buy from American companies' items that have been specifically identified as part of the RFP documentation. Some RMG suppliers will also consider procuring certain American items such as air compressors, electrical wire, lighting, HVAC systems, and locally sourced items used for the installation of the cranes (e.g. welding rods, etc.).

However, most potential foreign RMG suppliers will already have some level of American content. Typically, most foreign RMG suppliers rely upon local American labor for a portion of the site installation work. And at most American Ports, the local unions will provide the labor for the off-loading of the crane components from the transport vessel.

RMG Comparison to STS Cranes

A recently approved waiver for STS Cranes for the Port Newark Container Terminal (PNCT), dated April 8, 2016 provided an excellent overview of the economics applicable for STS container cranes. In regards to the RMGs for the GCT, some of the PNCT comments will be just as applicable for issuing a waiver for the supply of RMGs. Some of the differences in the design, manufacture, transport, and erection of a RMG crane versus a STS container crane are:

1. **Fully erected STS crane versus RMG intermodal Cranes** - Fully erected STS cranes offer many advantages for the supplier and for the owner. A fully erected RMG can be shipped to the GPA and can be off-loaded at their berth. For the GPA, the difficulty will be transporting the fully erected RMGs from the waterfront through the existing container terminal, across a State highway, and finally through the existing Mason Intermodal rail yard. This is especially difficult to achieve through the GPA since they are a 24 hour/day, 7 day/week, 361 day/year fully operational terminal. Accordingly, for the GPA RMG cranes, the major structures and various components will have to be shipped in smaller sizes to facilitate delivery to the erection site. In general, the major structures will have to be designed so that the structures can be easily and safely transported.
2. **Possible use of American content** - With the US dollar being very strong at this moment in time (relatively high against all major currencies except for Japan), this may help reduce the differential in the cost of various components used in the manufacture of the RMG.
    a. **Steel** - the latest data from CRU Steel Price Indicator indicates that there is about 20% difference in cost of steel between China and the USA. Indications over the last few years are showing that the differential is shrinking.
    b. **Fabrication** - there is about 30% difference in cost of steel fabrication between China and the USA. However, there are qualified and capable US based fabricators that have the potential to fabricate the same structural sections as will be fabricated by the foreign RMG suppliers.
    c. **American made mechanical components** - There are American manufacturer's that can produce the following key components:
        i. Crane wheels
        ii. Fasteners
        iii. Gearboxes/reducers
        iv. Sheaves and wire rope
        v. Winch drums
        vi. Almost every component of the electrical system
    d. **Transportation** - American sourced components should cost less than cost per ton to ship a fully assembled RMG. For reference, the cost to ship four (4) STS container cranes from China to the US currently cost about $7 million dollars and not via Jones Act carrier.

    Even if the US has the capability to provide these items, there will likely be an incremental cost for a foreign RMG provider to procure American made components and have the components shipped to the foreign suppliers' fabrication and assembly facility.

In an article by Brian Dumaine on June 26, 2015, and per the Boston Consultancy Group (BCG), estimates the average cost to manufacture goods in the U.S. is now only 5% higher than in China and is actually 10% to 20% lower than in major European economies. Even more striking: BCG projects that by 2018 it will be 2% to 3% cheaper to make stuff here than in China. The gap is that wages have been rising in China. And American companies have been boosting their productivity faster than many of their international competitors. But perhaps the single largest factor is that fracking has helped dramatically drive down the price of oil and gas that's being used in energy intensive industries such as steel, aluminum, paper and petrochemicals. BCG calculates that U.S. industrial electricity prices are now 30% to 50% lower than those of other major exporters.

How long will America's advantage last? Harvard Business School's Michael Porter, who along with BCG issued a new report in June called "America's Unconventional Energy Opportunity," says that America has about a 15-year lead on other nations when it comes to fracking. The most telling number to make that point? The U.S. has 101,117 fracked wells, followed by Canada's 16,990. By contrast China has 258. *A version of this article appears in the July 1, 2015 issue of Fortune magazine with the headline "Closing a Factory Gap, Thanks to Fracking*

Recommendation

Predicated upon approval of a Buy America Waiver for this project, the RFP will include a Base Bid will allow competitive bids from leading World-wide foreign providers. An alternative bid request should be made from the contractor that utilizes the same Base Bid amount, but includes a strategy to increase the American participation in the manufacturing and delivery of the RMG cranes. The contractor will be asked to include an Amercian participation percentage value to the project. A Selection Committee will be established to review the bids. Evaluation will be based on the following: qualifications/experience, price, American percentage, crane loads, and payment terms.

Regards,

Richard Cox
General Manager
RC Advisory Services, LLC

Mr. Rich Cox is an equipment and facility consultant with RC Advisory Services, LLC located in Savannah, Georgia. He has 40 years of experience in material handling with a focus on equipment and facility design, project management, and construction management of specialized bulk and container handling equipment for utility power plants, agri/bulk handling terminals, RO/RO, and container port facilities. Rich has administered equipment and construction projects in USA, China, Finland, and Germany. He has extensive experience in planning, fabrication, manufacturing, QA/QC inspection, site erection, and commissioning of ship loaders, ship unloaders, stacker/reclaimers, rotary car dumpers, agri/bulk conveying systems, RTGs, and container cranes. Previously Rich was with the Georgia Ports Authority for 17 years, first as Equipment Manager, then General Manager of Maintenance, and recently as the General Manager of Equipment and Facility Engineering. Previous to his position with the GPA, he was Vice President and founder of Transbulk, Inc., a design/build firm specializing in port and material handling projects. Prior to Transbulk he was with the McDowell-Wellman Engineering Company (currently part of the METSO of Finland).