



OFFICE OF INSPECTOR GENERAL PALM BEACH COUNTY

CONTRACT OVERSIGHT NOTIFICATION (2014-N-0006)

John A. Carey
Inspector General

ISSUE DATE: SEPTEMBER 30, 2014

"Enhancing Public Trust in Government"

Solid Waste Authority

Palm Beach Renewable Energy Facility #2 – Maintenance/Warehouse Building Change Order Number 10

SUMMARY

What We Did

We reviewed Change Order Number 10 for the Maintenance/Warehouse Building (Building) associated with the Solid Waste Authority's (SWA) Palm Beach Renewable Energy Facility No. 2 construction project (Project).

We reviewed the change in construction materials to determine compliance with wind load specifications contained in the Florida Building Code (Florida Code).

We assessed the Project's Quality Assurance/Quality Control (Quality) Plan to determine its effectiveness.

What We Found

We found that the Building Official for the City of West Palm Beach opined that the Building **complied** with the Florida Code's wind load requirements. However, due to human error, it was built with thinner wall panels than those specified in the design criteria package¹ that was submitted to the City of West Palm Beach to obtain the building permit. Due to this error, the SWA received a \$150,000 reduction in the contract price and an extension of the wall panel's finish warranty from 25-years to 30-years.

¹ "Design Criteria Package" is defined as "concise, performance-oriented drawings or specifications of the public construction project. . ."

We also found that although KBR Construction Company, L.L.C.² (KBR) developed and implemented a comprehensive Quality Plan; it did not prevent the Building from being built with thinner wall panels than those specified in the design criteria package.

Finally, we found that although the City of West Palm Beach issued a building permit for the Building, CDM Smith, Inc. (CDM)³ did not ensure that timely inspections were performed. Timely inspections could have identified that the structure was being built with thinner wall panels than specified in the design criteria package **prior** to completion.

What We Recommend

We issued two recommendations. First, when using the design-build delivery method, the SWA should engage the services of an independent party to perform oversight activities to help ensure that projects are built according to the design criteria specifications.

Second, KBR, the prime contractor, should ensure that sub-contractors

² Formerly known as BE&K Construction Company, L.L.C.

³ CDM Smith, Inc. is a consulting, engineering, constructing and operations firm working as a contractor/subcontractor on the Project.

schedule timely inspections on the SWA's Project.

according to the design criteria specifications.

In response to this report, the SWA **agrees** with our recommendation that it engage the services of an independent party (*where appropriate*) to ensure that construction projects are completed

Additionally, KBR responded to this report by acknowledging that they reviewed the SWA's response and had no further comment.

BACKGROUND

In September 2010, the SWA issued a Request for Proposal for the "Design, Build, and Operation" of a new renewable energy facility that is capable of processing 3,000 tons of municipal solid waste per day that will be used to produce electricity and reduce the amount of waste being sent to Palm Beach County's landfill. On April 13, 2011, the SWA Board awarded a \$668 million contract to the Babcock & Wilcox Power Generation Group, Inc.⁴ (B&W) and KBR. The Project requires the construction of multiple structures, including the Maintenance/Warehouse Building, which will be used to store parts, equipment, machinery, and provide for other uses. The estimated date of completion is May 2015.

On January 6, 2014, the SWA executed a change order that was required because the Building was built using thinner wall panels (26-gauge) than specified in the design criteria package (24-gauge). This change order provided a \$150,000 reduction in the contract price and an extension of the warranty for the wall panel finish from 25 years to 30 years.

Although the materials used were inferior to those specified in the documents used to obtain the building permit, the Building Official for the City of West Palm Beach has opined that the materials used **comply** with the Florida Code⁵.

FINDINGS

FINDING (1):

The Maintenance/Warehouse Building was built with materials that do not conform to those specified in the design criteria package.

OIG Review:

General Condition-47 of the contract requires the prime contractor, KBR, to develop a Quality Plan to monitor each element of the Project to ensure it meets the specifications in the design criteria package. Although KBR is responsible for implementing the overall Quality Plan, it was developed jointly with KBR, B&W and CDM. Moreover,

⁴ Babcock & Wilcox Power Generation Group, Inc. is responsible for the equipment used in the Project and will operate the facility on behalf of the Solid Waste Authority.

⁵ The contractor, Lebolo Construction Management, Inc., applied for the Maintenance/Warehouse Building permit using a Miami-Dade County, Notice of Acceptance (No. 10-0901.18) document. According to the Florida Building Code, Miami-Dade County is located in a "high velocity hurricane zone", requiring structures to withstand higher wind loads than structures not located in a "high velocity hurricane zone." The Notice of Acceptance No. 10-0901.18 approved by Miami-Dade County is for is for **24-gauge** wall panels and was used by the City of West Palm Beach when evaluating, and ultimately approving, the Maintenance/Warehouse Building permit; however, the Maintenance/Warehouse Building was constructed with a thinner **26-gauge** wall panel.

It is noted that the Maintenance/Warehouse Building **is not** in a "high velocity hurricane zone" therefore, installation of the nonconforming (thinner) wall panels complied with the requirements of the Florida Building Code.

because KBR, B&W and CDM are contractors on the Project, the SWA does not have an independent party performing construction oversight activities. This is important because after construction is complete the SWA will own the Project and independent oversight would have provided assurance that the Project was built according to the design criteria package specifications.

The Quality Plan specifies that CDM is responsible for constructing the Building. CDM's records show that, although it ordered 24-gauge thick steel wall panels, as required in the design criteria package, the supplier shipped thinner 26-gauge wall panels. On March 29, 2013, CDM's Quality Manager completed a "Materials Receipt Form" which did not note that nonconforming⁶ wall panels were received. The nonconforming wall panels were subsequently installed. Later, in October 2013, a representative from CDM spoke with the supplier about materials that were going to be used in the construction of another building associated with the Project. This conversation resulted in the supplier being the first one to identify that the Building was built with thinner wall panels.

In approximately November 2013, CDM notified the SWA that nonconforming wall panels had been delivered and installed, and offered the SWA the following corrective measures:

1. Remove the 26-gauge panels and replace with 24-gauge panels,
2. Install 24-gauge panels over the 26-gauge panels,
3. Leave the panels as installed and provide an extended warranty,
4. Provide a credit for the difference between 26-gauge and 24-gauge panels.

On January 6, 2014, the SWA agreed to a "Change to Contract Scope and Price" that recognized a change in the wall panel specifications, a \$150,000 reduction in contract price, and the issuance of an extended 30-year wall panel finish warranty⁷.

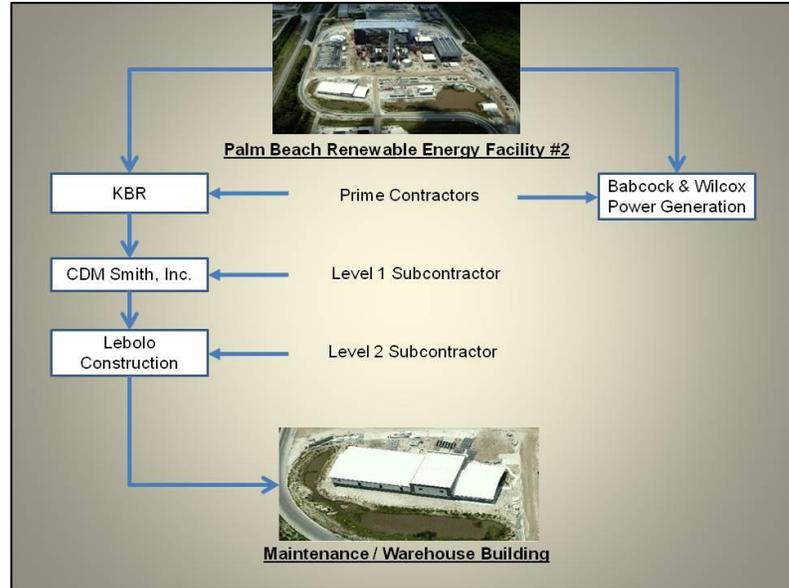
⁶ Nonconforming materials are those that do not meet the design criteria specifications.

⁷ The warranty was extended from 25 years to 30 years.

FINDING (2):

CDM Smith, Inc. did not ensure that the City of West Palm Beach performed timely inspections of the Warehouse/Maintenance Building as required by the Florida Building Code.

The Florida Code requires new construction projects to obtain a building permit and that inspections be performed. Section 109 of the Code states: “it shall be the duty of the holder of the building permit or their duly authorized agent to notify the building official when work is ready for inspection.” The Florida Code continues by stating, “**work shall not be done beyond the point indicated in each successive inspection without first obtaining the approval of the building official [emphasis added].**”

**OIG Review:**

CDM is responsible for the construction of the Building; however, CDM subcontracted with Lebolo Construction Management, Inc. (Lebolo) to perform construction work and apply for the required building permit from the City of West Palm Beach.⁸

On March 9, 2012, Lebolo applied for the building permit. On April 2, 2012, the City of West Palm Beach (Building Inspector) notified Lebolo that construction of the Building required a “resident inspector” who was to “be present at all times that work is underway on the structural components” of Type I or Type II⁹ construction projects to ensure it complies with the Code. However, a “resident inspector” was not engaged to perform inspection services as directed by the Building Inspector. Construction was completed in October 2013.

On August 7, 2014, the Building Inspector inspected the Building and identified concerns with the “cladding attachment” and “girt spacing” of the wall panels. Moreover, on August 12, 2014, the Building was inspected and **failed** because the revised, and approved, construction documents were not at the construction site. Using the approved construction documents, on August 30, 2014 a private engineering firm inspected, and **passed**, the Building. The engineering firm told us that CDM requested that it perform the inspection on the Building (single task) and that it is not acting as the resident inspector.

⁸ Records obtained from the City of West Palm Beach demonstrate that on June 4, 2014, the building permit was changed to reflect CDM as the general contractor (permit holder).

⁹ According to the Chapter 6, Section 602.2 of the Florida Building Code, Type I and Type II construction are those types of construction in which the building elements are of noncombustible materials except as permitted in the Code.

Timely inspections by either the Building Inspector or the resident inspector would have provided the SWA with independent assurance that the building's structural components (wall panels) complied with the construction documents.

In summary, although the SWA received a \$150,000 reduction in the cost of the structure and the warranty for the wall panel finish was extended from 25-years to 30-years, the building was built with thinner wall panels than the approved design because: (1) CDM's Quality Manager did not ensure that the wall panels received met the design criteria package specifications; and, (2) Lebolo and/or CDM did not ensure that the wall panels were timely inspected, by either the Building Inspector or the resident inspector, before continuing construction.

RECOMMENDATION: SOLID WASTE AUTHORITY

For Design-Build contracts, the Solid Waste Authority should engage the services of an independent party to ensure that construction projects are completed according to the design criteria specifications.

RESPONSE: SOLID WASTE AUTHORITY

On September 26, 2014, the Executive Director of the Solid Waste Authority provided a response to the Notification (Attachment A). The Executive Director **agreed** with our recommendation and stated, in part, that the "SWA concurs with the recommendations of the OIG and may consider engaging the services of an independent inspector for future design-build projects, on a case-by-case basis, as appropriate."

The Executive Director continued by stating, "Since the Maintenance/Warehouse Building is not considered a 'Threshold Building', independent inspections were not required. However, for the Maintenance/Warehouse Building, Tierra South Florida, Inc. was engaged by CDM Smith, Inc. as the independent 'Special Inspector' and worked closely with the City Building Division."

RECOMMENDATION: KBR CONSTRUCTION COMPANY L.L.C.

As required by the Florida Building Code, KBR Construction Company, L.L.C. (prime contractor) should ensure that sub-contractors schedule timely inspections of the Palm Beach Renewable Energy Facility No. 2 by the City of West Palm Beach prior to work being performed beyond the point indicated for each successive inspection.

RESPONSE: KBR CONSTRUCTION COMPANY, L.L.C.

On September 26, 2014, the Principal Project Manager for KBR Construction Company, L.L.C. provided a response to the Notification, stating:

"KBR and CDM Smith have reviewed the response provided by the Solid Waste Authority on September 26, 2014 related to this issue and have no further comments. We are available to assist you at any time."

OFFICE OF INSPECTOR GENERAL RESPONSE

We agree that the Maintenance/Warehouse Building is not a “Threshold Building,” and as such an independent inspection by a “Special Inspector” is not always required. However, the Florida Building Code requires a timely inspection by someone even when a building is not a “Threshold Building.” In this case, City of West Palm Beach records show that, prior to issuing the building permit on August 23, 2012, they advised Lebolo Construction Management, Inc, the applicant, that a resident inspector was required for this building. On January 27, 2014, we requested that Tierra South Florida, Inc. provide us a copy of the inspection reports for the exterior wall panels. During the course of our review, Tierra South Florida, Inc. advised us that inspection of the exterior walls for this building was not within the scope of work in its contract and that “based upon our records, the exterior wall panels are not a part of our inspections for this building. As such, TSF did not witness installation, and no reports were created.” On January 31, 2014, we reviewed records from the City of West Palm Beach demonstrating that it did not inspect the wall panels.

On August 30, 2014, months after completion of the building and the problem having been made known to all parties, Tierra South Florida, Inc. inspected the exterior wall and roof paneling for the Maintenance/Warehouse Building. However, that inspection was not timely as required by the Florida Building Code.

ACKNOWLEDGEMENT

The Inspector General’s Contract Oversight staff would like to extend our appreciation to the staff and management of the Solid Waste Authority and KBR Construction Company, L.L.C. for the cooperation and courtesies extended to us during the contract oversight process.

This report is available on the OIG website at: <http://www.pbcgov.com/OIG>. Please address inquiries regarding this report to Hank K. Nagel, Contract Oversight Manager, by email at inspector@pbcgov.org or by telephone at (561) 233-2350.

ATTACHMENT A



September 26, 2014

TO: Hank K. Nagel, Contract Oversight Manager

FROM: Mark Hammond, Executive Director 

RE: Palm Beach Renewable Energy Facility No. 2 Construction Project
Change Order No. 10 – Maintenance/Warehouse Building

In response to your memorandum dated September 18, 2014, we offer the following to be included with the OIG report:

Response From Management:

Arcadis is currently serving as the "Design Criteria" consultant (Consultant) for this project. The Consultant has onsite staff to monitor construction activities and its general conformance with approved design, in accordance with the Design-Build contract. Consultant periodically brings their specialty staff such as structural engineers, architects, and mechanical engineers to monitor and discuss construction activities and to identify any deficiencies in construction based on their onsite observations. SWA concurs with the recommendations of the OIG and may consider engaging the services of an independent inspector for future design-build projects, on a case-by-case basis, as appropriate.

Acknowledgment:

SWA acknowledges that the thickness of wall panels installed for the Maintenance/Warehouse Building deviated slightly from the design specifications. As noted by the OIG, the deviation was due to human error, and, therefore, not systemic. The non-conformance was self reported by the Contractor. Although the wall panels installed were not in conformance with the design criteria, they meet the requirements of the Florida Building Code, as determined and approved by the City of West Palm Beach (City). Since the Maintenance/Warehouse Building is not considered a "Threshold Building", independent inspections were not required. However, for the Maintenance/Warehouse Building, Tierra South Florida, Inc. was engaged by CDM Smith Inc., as the independent "Special Inspector" and worked closely with the City Building Division. For the remainder of the project, ECS is serving as the independent "Threshold Inspector" under a direct contract with KBR. Therefore, no additional third party inspection services are necessary or beneficial.

We appreciate the opportunity to respond and thank you for your constructive recommendations.