**U.S. GENERAL SERVICES ADMINISTRATION**
Office of Inspector General

September 27, 2011

MEMORANDUM FOR ALLISON H. AZEVEDO
REGIONAL COMMISSIONER, PBS
GREAT LAKES REGION (5P)

FROM ADAM R. GOOCH
REGIONAL INSPECTOR GENERAL FOR AUDITING
GREAT LAKES REGION (JA-5)

SUBJECT Procurement of Lighting Replacement at the Jeffersonville Federal Center in Jeffersonville, Indiana in support of the American Recovery and Reinvestment Act of 2009[1].
Memorandum Number A090184-21

This memorandum presents the results of our review of a $90,889 task order, awarded to H.J. Lyness Construction, Inc. (Lyness) of Lawrenceburg, Indiana. This task order (number GSP0509SX0033) awarded under contract number GS-05P-04-GA-D-0088 called for replacing existing T 12 lamps with T 8 fixtures[2] at the Federal Center in Jeffersonville, Indiana.

Our review identified two areas of concern related to the procurement process which we believe should be brought to your attention. PBS affected a cardinal change by tripling the value of the task order immediately after award. In addition, the payback period of the fixture replacement does not represent a reasonable return on investment.

## Increase in Contract Price Constitutes a Cardinal Change

PBS affected a cardinal change to the contract when, on the day of award, it increased the scope and price of the task order threefold. As a result, other vendors were not afforded a fair opportunity to compete for all of the available work. Had other vendors

[1] The American Recovery and Reinvestment Act of 2009 (ARRA) provides the General Services Administration (GSA) with $5.55 billion for the Federal Buildings Fund. In accordance with ARRA, the GSA Public Buildings Service (PBS) is using the funds to convert Federal buildings into High-Performance Green Buildings as well as to construct Federal buildings, courthouses, and land ports of entry. The ARRA mandates that $5 billion of the funds must be obligated by September 30, 2010 and that the remaining funds be obligated by September 30, 2011. The GSA Office of Inspector General (OIG) is conducting oversight of the projects funded by the ARRA. One objective of this oversight is to determine if PBS is awarding and administering contracts for limited scope and small construction and modernization projects in accordance with prescribed criteria and ARRA mandates.

[2] Fluorescent lamps are typically coded by shape and diameter. The T indicates a tubular shape and diameter is measured in eighths of an inch. A T12 lamp is tubular in shape with a diameter of 12/8 of an inch or 1 ½ inches and a T8 lamp is tubular in shape with a diameter of 8/8 of an inch, or 1 inch.



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known the actual scope of the work to be done, GSA might have received additional bids and achieved better pricing. GSA should have re-competed the contract or provided a valid justification for proceeding with the procurement.

On August 25, 2009, GSA issued request number IN05300913014 to all the indefinite delivery indefinite quantity (IDIQ) contract holders for the state of Indiana. The Request for Quote (RFQ) contained an “attached Scope of Work” which stated the Government wanted 950 light fixtures to be removed, furnished, and installed. The RFQ further stated: “the government may request the contractor replace additional light fixtures.”

The 950 figure was based on an estimate prepared by a Region 5 architect on August 10, 2009. The architect said he, “backed into” this figure by using a software program to determine the quantity of fixtures that could be replaced within the project’s $262,640 authorization. Two bids were received based on this estimated scope of work – one for $90,899 and another for $94,724 - both substantially less than the amount authorized. The architect addressed the discrepancy between his estimate and the bids that were received in a memo to the contracting officer. He stated that his estimate “…identified considerations that the contractor did not require for the administration of the project and acquisition of materials”, which included costs for field superintendent, the protection of adjacent finishes, an on-site dumpster, and overhead and profit percentages. However, the memo does not fully reconcile the significant differences between the original estimate and the bids that were received.

On September 22, 2009, PBS awarded a task order to Lyness to replace 950 light fixtures for $90,899. On the same day, the Contracting Officer’s Representative notified Lyness that an additional 1,892 light fixtures had to be replaced and that the contract value would be increased by $171,688. The contract modification incorporating these changes was subsequently signed by the contracting officer on September 30, 2009.

The modification nearly tripled the value of the contract (from $90,899 to $262,587). This 188 percent increase amounted to a cardinal change to the contract. As such, PBS should have re-competed the project or provided a valid justification for not doing so.

Federal Acquisition Regulation 7.202 (a) requires agencies to “procure supplies in such quantity as – (1) will result in the total cost and unit cost most advantageous to the Government….” Since the estimate used to determine the scope of work in the RFQ severely undervalued the cost, the economy of the project was likely compromised. Other bidders did not have an opportunity to factor in economies of scale that might result from a change of this magnitude.

Because PBS managed this procurement in this manner, it has no assurance it received the best value for the work done.

PBS responded to the draft memorandum as follows:

In response to the concern that “GSA might have received additional bids and achieved better pricing”; PBS used an existing IDIQ contract for this work and received quotes from all of the IDIQ contract holders; therefore, we would not have received any additional bids as the competitive pool was defined by the IDIQ contracts in place.

Further, your review was silent on the fact that the solicitation and award included priced line items for unit pricing (on a "1 each" basis) of additional demolition/removal (both during normal business hours and after-hours) of T-12 lamps and additional furnish/install of T-8 fixtures. The low and winning contractor for the base lump sum work, HJ Lyness, was also lower than the unsuccessful contractor on all four additional unit prices. Additionally, page 00001-5 of the solicitation explicitly informed contractors that, "The government may request the contractor replace additional light fixtures." Based on the inclusion of the unit pricing and the preceding sentence the competing contractors were on notice that additional units may be ordered; therefore, the ordering of the extra units is clearly within the scope of the competition.

Your review also states that, "other bidders did not have an opportunity to factor in economies of scale that might result from a change of this magnitude." As noted above, all IDIQ contract holders submitted a quote for this work. While these contractors may not have been able to factor economies of scale for the final total order, the initial order was for a substantial scale and quantity, 950 fixtures, and given the law of diminishing returns it is reasonable to conclude that even if the contractors had known that we were going to order additional fixtures we would not have obtained better pricing than that obtained in their submitted unit prices. Additionally, by impacting a greater portion of the building the contractor’s risk would increase and their prices may actually have risen.

Although we did not document the unit pricing in the memo, we did include its effect as part of our review. However, the notion that because the contract was priced on a per unit basis, bidders were effectively placed on notice of a contract value increase of this magnitude is questionable. While possibly useful in explaining how minor or reasonable increases in the number of units ordered would impact on the total contract value, nothing in the per unit pricing could possibly put potential bidders on notice of a trebling of the contract value on the very same day the contract was awarded. In addition, PBS does not address why, if the modification was ready to be issued on the very same day the contract was initially awarded, the award was not postponed and the bidders permitted to resubmit bids for the much larger contract. In our opinion, the situation constitutes a cardinal change and nothing in PBS's response offers a reasonable explanation to refute the draft finding.

**Payback period of project does not represent a significant return on investment**

PBS computed a 25.5 year payback period for the light fixture replacement project based on changing 3,752 fixtures at a cost of $262,640. The contract, as modified, calls for changing 2,842 fixtures (910 fewer than the payback calculation) for essentially the same cost: $262,577.

Using the actual numbers, we calculated an updated payback period of over 33 years. Since T8 lamps have a 12.25 year[3] estimated useful life, it is likely that the lamps will need to be replaced several times before the investment costs are recovered.

Although the lighting replacement was necessary because the federal government mandated the phase-out of T12 fluorescent tubes and ballasts, no additional study was undertaken by PBS to determine the most cost effective means of upgrading the lighting system at the Federal Center.

The American Recovery and Reinvestment Act of 2009 emphasizes investment in energy-efficient technologies, a reduced carbon footprint, and decreased energy consumption. It also states that investment in the government's real estate infrastructure will provide a significant return on investment for the taxpayer. A lighting study could have been used to determine the most cost effective alternative for the project. A payback period of 33 years is, arguably, well beyond a reasonable return on investment for the taxpayer.

PBS responded to our analysis of the payback period as follows:

> The simple payback, stated in the report findings, underestimates the economic impact of energy projects as that approach fails to account for all relevant costs. Additionally, the swap out of T12 units with T8s is an extremely common energy saving practice in commercial buildings. For this project, PBS made a business decision not to pursue experimental solutions such as LEDs or more costly alternatives, and go with proven technology and predictable energy savings.
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> The report touches on one of the relevant costs when it notes that the newly installed bulbs will have a 12.25 year estimated life. This project and the replacement of the luminaries in Jeffersonville replaced the existing florescent tubes that were likely at the midpoint of their 7-year life expectancy. Beyond the life of the new bulbs, another relevant cost is the service call impact of the existing system that was replaced. Through the implementation of this project PBS avoided the anticipated thousands of service calls to address replacement of burned out bulbs alone; not to mention additional service calls that would come in related to the failures of the old magnetic ballasts. The cost of each service call for a burned out bulb would include the cost of the bulb, approximately $2.00 each, approximately 15 minutes of labor to replace the bulb at an approximate cost of $10.00 per bulb for a fully loaded labor rate, and a hazardous waste disposal fee of approximately $1.00 each to dispose of the mercury containing fluorescent tubes. Another very significant factor that complicates the interpretation of the "simple payback" calculation is the fact that

[3] To compute the useful life of the T8 fixtures, we used an estimated life of 40,000 hours divided by the overall average annual usage per fixture.

the lamps were not being replaced in a one-for-one manner. The existing 2-lamp luminaries were replaced with 3 -lamp luminaries as the areas being serviced did not meet proper lighting levels.

This project appropriately addressed the goals and objectives of the American Recovery and Reinvestment Act of 2009 by creating or maintaining jobs while helping to make our asset more high performing and energy efficient. It also allowed us to address operational shortfalls such as lighting levels in the building and save money on ongoing maintenance issues. The return on this investment is not only in decreased maintenance and decreased energy usage but in the investment in the economy both in job creation and maintenance as well as direct support to vendors of energy efficient products.

We appreciate that PBS will avoid the cost of service calls on the old lighting and did not want to use experimental technologies. However, the issue raised in the report is that there is no indication that PBS tried to identify the most cost effective method of replacing the old lighting. A lighting study could have identified a methodology where PBS could achieve more cost effective lighting with proven technology as well as the savings from the service calls. In addition, while we understand that PBS may have considered a variety of reasons in awarding the task order, we only found documentation of the payback period in the contract file as a basis for the project determination.

We appreciate the support that has been provided throughout this review. If you have any questions about this memorandum, please contact me at (312) 353-0500 or audit manager John Langeland at (312) 353-6691.

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