



Wicomico County, Maryland

P.O. BOX 870
SALISBURY, MARYLAND 21803-0870
410-548-4696
FAX 410-548-7872

Steve Roser, CPA/CIA/CFE
Internal Auditor

October 1, 2014

Internal Auditor's Report

The County Council and County Executive of Wicomico County, Maryland:

Pursuant to Section 305(D) of the Wicomico County Code and Council Resolution No. 114-2014, the Office of the Internal Auditor (IA) has conducted an Audit of the Energy Systems Group (ESG) contract with Wicomico County. A report is submitted herewith. The purpose of the audit was to determine ESG contract compliance concerning energy upgrades for the County.

IA conducted the audit with due professional care and IA planned and performed the audit to obtain reasonable assurance about whether ESG is in compliance with the accepted proposal to upgrade and improve County infrastructure relating to energy performance and whether savings in energy costs pay for those improvements.

The audit revealed possible disconnection between the ESG calculated savings and actual meter readings. Additionally, IA poses several questions for ESG and management concerning this exercise.

Respectfully submitted,

J. Stephen Roser, CPA/CIA/CFE
Internal Auditor

Contents

Internal Auditor’s Report	1
Audit Report.....	3
Background (<i>reproduced from the Audit Report dated March 25, 2013</i>).....	3
Wicomico County Infrastructure	3
Phase I.....	3
Phase II.....	3
Completion.....	4
Audit Objective	4
Scope of the Audit.....	4
General Highlights.....	4
Conclusion.....	4
Schedule of Findings and Questions	4
Measurement.....	4
Questions	5
Auditor’s Closing Remark.....	6

Audit Report

Background *(reproduced from the Audit Report dated March 25, 2013)*

Wicomico County Infrastructure

The buildings and facilities from which Wicomico conducts its business are aging. For example, according to the building’s cornerstone, the County constructed the Government Office Building (GOB) in 1975. The natural aging of County properties, coupled with recent economic downturn, leaves infrastructure in need of numerous upgrades. The underlying principle behind the ESG project is; energy technology has advanced to the point that energy savings offset the cost of energy upgrades to the antiquated County infrastructure.

Phase I

The first phase of the operation, according to Purchasing, came about due to massive failure of some major components. As anyone working in the GOB during the summer of 2011 can attest, the failure of the chiller created uncomfortably warm working conditions for a considerable amount of time. Additionally, the County suffered failure of two other major components: the boiler in the Old Courthouse adjacent to the GOB and the boiler at the Sheriff’s Office. The original contract price for Phase I was \$1,281,463.

Phase II

The second Phase of the project involved extensive work to various parts of the County infrastructure and contained the bulk of the work. The scope included the following locations:

Airport	Sports Complex
Courthouse/Courts	Tourism
Detention Center	Westside Community Center
Goldman Annex	Winterplace
Government Office Building	Roads Division
Seth Hurdle Health Center	Sheriff’s Office
Wm Fritz Health Center	Solid Waste Division
Library	Nursing Home
Co-op Extension	Perdue Stadium
Wicomico Youth and Civic Center	

Upgrades for various locations included:

- Electrical Systems
- Lighting
- Cooling Systems
- Heating Systems
- HVAC Controls
- Water Conservation
- Building Envelope

Original cost of Phase II according to the contract was \$4,059,985.

Completion

According to Purchasing, Phase II of the project was substantially complete as of March 1, 2013. The contractor billed for final payment less retained funds in January.

Audit Objective

The objective of the audit is to assure that ESG is in compliance with the contract in force with the county.

Scope of the Audit

The audit period, examined on a test basis, was FY 2014. The Scope was open ended. Observations and Inquiries with appropriate personnel were conducted, as well as examination of various documents pertaining to the following:

- Contract in force between ESG and Wicomico County
- Metered energy bills from selected departments
- ESG Guarantee Report – Year 1¹ received September 18, 2014
- Management interviews for selected departments

General Highlights

IA gathered energy billing data data from selected departments and compared usage to baseline information provided by ESG. IA gathered usage in units rather than dollar amounts because dollar amounts fluctuate due to rising and falling prices. We then recalculated guaranteed savings for the period (in units²) based on ESG supplied guaranteed dollar savings and ESG supplied baseline rates. We found that actual usage fell considerably short of guarantees using this method.

Conclusion

Due to the ongoing nature of this project, we cannot definitively conclude that ESG is, or is not, in compliance with the contract as stated in the audit objective. However, we offer several observations and questions concerning the method of calculation employed by ESG and other matters and suggest further review based on responses.

Schedule of Findings and Questions

The findings listed below represent some key issues that bear discussion as an added feature to the audit process.

Measurement

ESG refers to the method of measurement employed as “Option A”. Per ESG, “Option A” is appropriate for situations where uncontrolled variables exist that directly impact metered use of the facility. Please note that this method contains subjective components. According to the ESG report:

¹ Please note that the ESG report refers to the contract year 2 as year 1 (the first measurement savings period)...it equates to county fiscal year 2014

² Units include: Kilowatt Hours, Kilo gallons, and Thermal Units

Using the “Option A” methodology, savings are determined by field measurement of the key performance parameter(s) [that] define the energy use of the ECM³ affected systems and/or success of the project. Parameters not practical or possible for field measurement are estimated. Estimates can be based on historical data, manufacturer’s specifications, or engineering judgment.⁴

According to the ESG report using the aforementioned method of measurement, total Year 2 savings for Wicomico County attributed to the upgrades was \$485,054. Per ESG, this figure exceeds the contracted guarantee savings of \$481,542. A breakout for selected buildings of actual electrical usage vs. ESG calculated savings follows:

	GOB	DOC	Stadium ⁵
Meter Readings (kWh)			
<i>Source</i>			
Baseline per ESG	1,239,935	2,510,861	973,346
Usage per meter study	891,600	2,287,200	950,855
kWh savings (difference)	348,335	223,661	22,491
ESG Calculation (kWh)			
<i>Source</i>			
Lighting upgrades	75,820	544,013	209,588
Transformer upgrades	20,873	44,377	53,016
Motor Replacements	10,210	-	-
Cooling System	216,780	4,169	-
HVAC Upgrades	195,168	-	-
Building Envelope	719	1,220	-
kWh savings (sum)	519,570	593,779	262,604
Variance	(171,235)	(370,118)	(240,113)
	19%	16%	25%

The percentage figures represent the IA/ESG calculated variance as a percent of total usage. That is, the difference between ESG calculated savings for GOB and actual savings is 19% of the total GOB electricity usage for the period. According to ESG “Option A” calculation description, these variances may be caused by “unrelated variables”. IA is of the opinion that a 16-25 percent variance attributed to “unrelated variables” seems excessive.

Questions

1. On page two of the Executive Summary portion of the ESG year 1 report, ESG lists four reasons the actual energy savings are higher than the guaranteed savings. Concerning the second bullet point, how does applying the implemented schedule to the calculations for HVAC Control Upgrades ECM relate to increased savings?
2. On page two of the Executive Summary portion of the ESG year 1 report, ESG lists four reasons the actual energy savings are higher that the guaranteed savings. Concerning the third bullet point, how does

³ Energy Conservation Measures

⁴ Energy Services Guarantee Report – Year 1; p6

⁵ Please note that we derived the baseline usage for Perdue Stadium by reviewing electric bills for the baseline period. Annual baseline stadium usage according to ESG breakout was 30,357 kWh. We assume that figure erroneous.

additional exterior LED lighting fixture installation relate to the savings? Does this relate to the original contract?

3. Page two of the Executive Summary portion of the ESG year 1 report, in the last paragraph states that the year 2 energy savings as presented in Table B (page three) will remain constant through all performance periods. Does this mean that there will be no further annual calculations?
4. Table B on page three of the aforementioned report line 1 contains building ID #1 for the Airport. Does this refer to the Piedmont Airlines Corporate Headquarters Building?

Auditor's Closing Remark

IA would like to express special appreciation to the Participating Departments for their willingness to provide a vast amount of documentation and other information. Additionally, IA would like to recognize the Purchasing Department for their assistance in this effort.