FACILITIES MANAGEMENT

ENERGY SERVICES

AUDIT REPORT #21-2001

Audit & Advisory Services

July 2021

FACILITIES MANAGEMENT

ENERGY SERVICES

AUDIT REPORT #21-2001

Background

In accordance with the UCLA Administration fiscal year 2020-21 audit plan, Audit & Advisory Services (A&AS) conducted an audit of internal controls and associated business practices of Energy Services. Energy Services is a division within the Facilities Management (FM) department.

Energy Services provides UCLA with energy resources by operating the campus power plant. Annually, the Energy Services facility produces over 250 gigawatt hours of electricity, and the central Cogeneration (COGEN) heating and chiller plant provides an estimated 730 billion British Thermal Units (BTUs) of heating energy in the form of steam and 870 billion BTUs of air conditioning. These energy products are distributed to over 60 campus buildings through a network of 12 miles of chilled water lines and eight miles of high pressure steam distribution lines. The COGEN plant is operated by a third party under contract to Facilities Management. Off-campus locations and several buildings on the southernmost part of campus are powered directly by Los Angeles Department of Water and Power.

In addition to the COGEN plant, Energy Services engineers maintain building chiller, HVAC (heating, ventilation, and air conditioning) and DDC (direct digital control) building control systems, campus pools, fountains, and 270 elevators and handicapped lifts on campus and in the Center for Health Sciences building. Other critical services provided include maintenance, repair, and upgrade of departmental equipment such as pneumatic tubes, autoclaves, medical gas and vacuum systems, compressed air systems, sensitive research equipment, etc. Energy Services staff that are members of the Facilities Management Disaster Initial Response Team receive training in first response, fire suppression, light search and rescue, and restoring utility systems and building functionality in the event of a major disaster.

FM’s Energy Services unit consists of 18 staff members that report to the Director of Energy Services.

Purpose and Scope

The primary purpose of the review was to ensure that Energy Services’ organizational structure and controls related to the administration of energy services are conducive to accomplishing its business objectives. The secondary purpose was to evaluate the adequacy and efficiency of internal controls. Where applicable, compliance with University policies and procedures was also evaluated. The scope of the audit focused on the following areas:

* Recharge Billing
* Smart Buildings / Smart Labs Program Administration
* Overtime Approval
* Information Technology

The review was conducted in conformance with the *International Standards for the Professional Practice of Internal Auditing* and included interviews, tests of records, and other auditing procedures considered necessary to achieve the audit purpose.

Summary Opinion

Based on the results of the work performed within the scope of the audit, Energy Services’ organizational structure and controls are generally conducive to accomplishing its business objectives related to energy services activities. However, controls and business practices could be further strengthened by management implementing the following:

Recharge Billing

* Establish formal written procedures for monthly metering and billing control activities. The procedures should include established responsibilities from the start to the end of the metering and billing process.
* Maintain adequate supporting documentation to evidence completion of adjustment transactions that are processed by the FM Accounting unit for control activity purposes, and to make the documentation available to the Energy Services division.

Smart Buildings / Smart Labs Program Guidelines

* Establish formal written guidelines for all Smart Buildings / Smart Labs Program control activities. The written guidelines should establish clear responsibilities for all departments that collaborate within the process.

Overtime Approval – Written Procedures

* Develop formal written procedures for biweekly overtime activities to establish clear responsibilities for all aspects of the overtime process.

The audit results and corresponding recommendations are detailed in the following sections of the report.

Audit Results and Recommendations

Recharge Billing and Adjustments

Energy Services’ responsibilities include preparing utility usage billing data for all utility types on a monthly basis for its campus customers. This usage data is prepared and reviewed for completeness by the Senior Administrative Analyst and the Senior Energy Analyst before being sent to the FM Accounting unit for processing monthly utility billings. However, there is no formalized review and approval process related to these billings. Subsequently, FM Accounting is tasked with the responsibility to verify the utility usage data received from Energy Services in order to prepare the monthly billing charges. FM Accounting utilizes each customer’s Full Accounting Unit (FAU) to bill the appropriate campus customer.

Energy Services engineers manually obtain analog meter readings at the beginning of each month. Digital meters are also used throughout the campus. These digital meters transmit electronic meter read data directly to the “Blackbox” System on a monthly basis. Blackbox is software used by Energy Services to obtain digital meter reads for monthly utility usage. Digital meter reads for chilled water and steam meters are subsequently obtained online, as necessary.

Occasionally, a meter cannot be read because of a lack of physical access or an issue with the meter. In those circumstances, meter usage estimates are utilized for monthly meter reads until a proper read is attainable. Estimated meter reads are computed by using a set formula that calculates an average based on previous usage data. Once actual meter reads are obtained, the information is provided to the Senior Administrative Analyst, who manually enters the meter reads into the WebMeter system. Multiple reads may be requested by Energy Services throughout the month if the meter read data appears inconsistent or inaccurate. Energy Services staff ensures that each meter read properly reconciles, and is accurately reflected for utility billing purposes.

Because the WebMeter system can store meter usage formulas, Energy Services staff do not need to manually calculate the monthly analog meter usage when the monthly read is obtained and subsequently entered. Digital meter reads do not require a formula because the actual meter read data is used as the meter’s usage for the month. Utility rates that are used to calculate billing amounts fluctuate each month depending on the utility type. For example, domestic water and gas rates may vary each month.

In order to verify whether utility recharge data was reviewed for accuracy prior to the billing process, A&AS performed audit testing on meter read and billing data from May 2020 to July 2020. This data was obtained from the Energy Services Senior Energy Analyst and FM Accounting personnel. Utilizing data analytics to identify recharge meters with monthly usage fluctuations of 50% or greater, a sample of 40 meters was selected to verify the accuracy and timeliness of billing. Although five utility billing variances were noted, ranging from 1% - 3% of the amount billed, the results were deemed immaterial. In addition, to validate the timeliness of utility billing, the results of the verification were compared to the same utility recharge billing amounts provided by the FM Accounting unit. Each recharge meter selected for testing could be reconciled with FM Accounting billing data, demonstrating that meter usage data was provided to FM Accounting in a timely manner.

Written Procedures for the Metering and Billing Process

Each month utility meters are read by Energy Services staff in order to accurately assign the corresponding billing amount to on-campus customers. There are several steps involved in the control activity that may require additional actions and processing by Energy Services staff to obtain the correct meter usage value. These usage values are relied upon by FM Accounting to assess the correct utility charges.

Management does not have formal written procedures for monthly metering and billing control activities. Having written procedures would benefit the Energy Services division by establishing clear responsibilities in the metering and billing process, including obtaining meter reads, data entry into WebMeter, calculating usage, investigating meters, adjustment transactions and approval, data compilation, and analyzing meter data. Moreover, campus Policy 360, "Internal Control Guidelines for Department Campuses," requires control activities that include operating procedures to be identified and captured, so that management may carry out its responsibilities efficiently and effectively. Without established written procedures for all components of operational processes, efficiency and effectiveness of the monthly metering and billing process may be affected. Lastly, essential institutional and organizational knowledge could be at risk of loss, in the event of staff separation from the Energy Services division.

Recommendation: Management should establish formal written procedures for monthly metering and billing control activities. The procedures should establish responsibilities in the metering and billing process that include obtaining meter reads, WebMeter data entry and compilation, investigating meter variances, investigating prior meter reads for adjustment transactions, and data review by the Senior Engineer. The procedures should also include verifying the accuracy of the data since this process is relied upon by FM Accounting.

Response: We concur that written procedures should be developed for the entire meter reading process. Soon after the beginning of the audit process, Energy Services recognized the need to start standardizing our work processes and began developing SOPs for the program. We anticipate that it will take to the end of the calendar year to successfully document all the procedures. In addition to these SOPs, ES will also be adding SOPs for meter estimations, document management and formalizing the meter standards to be included in Capital Program’s design standards for new construction. The metering standards should be completed by August 15, 2021.

Adjustment Transactions

Adjustment transactions occur after usage estimates are utilized because specific meters reads cannot be performed, or when a meter’s prior usage amount resulted in an inaccurate billing. The previous usage total resulting in an inaccurate billing requires an after-the-fact adjustment within the system. For example, estimated meter usage values used for billing purposes may create variances that require adjustment transactions for the meter(s) in future months. However, due to a system limitation, the WebMeter system is unable to process adjustment transactions to adjust previously inaccurate meter reads. For instance, once Energy Services personnel enters the correct meter usage, FM Accounting must process the amount billed within the WebPU system and communicate the transaction back to Energy Services. After a meter’s adjustment transaction is completed, Energy Services inputs the adjustment information into WebMeter. In addition, the FM Accounting unit performs a utility billing analysis for meters with adjustment transactions that result in billing variances greater than $10,000. However, FM Accounting staff do not notify Energy Services that any required adjustment transactions have been completed.

Adjustment transactions are approved by authorized Energy Services staff depending on the threshold total. The thresholds are as follows: $0 - $5,000 are sent to FM Accounting without requiring approval; $5,001 - $10,000 require approval from the Senior Energy Engineer; and adjustment transactions totaling $10,001 and above require the approval of the Energy Services Director. A&AS reviewed the supporting documentation and approvals for completeness and accuracy.

Supporting Documentation – Billing Adjustments

A&AS performed audit testing on five adjustment transactions to assess their accuracy. Based on our review, we noted that the supporting documentation did not adequately reflect completeness for the utility billing control activity. Because adjustment transactions occur after a campus customer has been billed, the documentation reviewed did not substantiate that FM Accounting personnel completed the transactions in WebPU, and then subsequently communicated to Energy Services that the adjustment transactions had been completed. FM Accounting does not provide supporting evidence confirming that the adjustment transactions submitted by Energy Services have been completed and processed timely. Both FM divisions are aware of the system limitation for adjustments and their manual entry into WebMeter.

Recommendation: Management should ensure that the FM Accounting unit maintain adequate supporting documentation to evidence that adjustment transactions are processed and completed timely for control activity purposes. Documentation should include, but not be limited to, documented communication that the adjustment transactions are complete, given the current system limitations for adjustment transactions, and be made available to the Energy Services division.

Response: Effective with the June 2021 Purchased Utilities billing cycle, FM will implement the following measures:

1. FM Accounting will send a confirmation email to Energy Services upon completion of the billing adjustments.
2. FM Accounting will save the billing adjustments worksheet in a shared drive accessible by Energy Services and FM Accounting.
3. FM Accounting will save a PDF of the Job Management System adjustment submission confirmation page in the shared drive.

The estimated completion for this item is July 15, 2021.

Smart Buildings / Smart Labs Program Administration

The Smart Buildings / Smart Labs Program is the campus' carbon neutrality initiative and is targeted to be achieved by 2025. Selected campus buildings are tested by an authorized independent energy contractor to identify possible energy saving opportunities. The Design & Project Management (DPM) division is responsible for maintaining a schedule to track and monitor all phases of the project. The project monitoring schedule includes information such as pre-activities, research, building work, approvals and construction. DPM also manages the construction phases on behalf of Energy Services. DPM project managers assigned to the program oversee related project documentation, including updating schedules to track and monitor progress using “Microsoft Projects” software.

Energy Services division staff are responsible for overall decision making and selecting buildings for the Smart Buildings / Smart Labs Program. DPM manages the contracts, and submits contract funding documentation to the Capital Programs department via the CapSTAR system. This process utilizes the "Capital Project Summary" (CPS) document that provides information for the capital improvement budget, project summary, schedules, and environmental impacts. The CPS document must be signed by Facilities Management, Capital Programs management, Administrative Vice Chancellor, and Chief Financial Officer. With various departments involved in the process, each department maintains project documentation and schedules within their own work management systems (CapSTAR, Microsoft Projects, and Maximo). However, project managers may also provide updated schedules as necessary throughout the process.

Smart Buildings / Smart Labs Program Guidelines

Formal written guidelines for Smart Buildings / Smart Labs Program control activities have not been developed, established, and implemented. With various departments and systems involved in the process, roles and responsibilities have not been clearly defined and communicated. Written guidelines necessitate properly synchronized collaboration from each applicable department throughout the process.

Recommendation: Management should establish formal written guidelines for all Smart Buildings / Smart Labs Program control activities. The written guidelines should establish clear roles and responsibilities for all departments that collaborate within the process. The guidelines should include, but not be limited to, eligibility of building selection, criteria for energy savings, required documentation, proper approval process, tracking and monitoring schedules, updating plans, various project phases, and additional energy savings analysis in order to achieve management's overall objectives for the Smart Buildings / Smart Labs Program.

Response: We concur with the recommendation to establish formal guidelines for the entire Smart Buildings and Labs Program. The Energy Services (ES) department has already begun the process to document certain aspects of the program including, but not limited to the following activities:

1) A program charter that delineates the responsibilities of the major stakeholders, program objectives and communication plans.

2) Development and standardization of document management using a shared directory within FM so that all stakeholders can view program documentation.

3) Creation of an advisory board that reviews key decisions made by the program director.

4) Development of SOP’s for the testing of HVAC systems, labs, and fume hoods. Given the breadth and depth of the SBL program, program documentation will be an on-going process for the next year or so. We will strive to complete all of this documentation within the next twelve months (by June 30, 2022).

Overtime Approval

Because of the nature of Energy Services operations and service to the campus, overtime work is regularly available to its staff. As a result, overtime is generally approved in advance by the Energy Services Director. Overtime opportunities are available to the DDC service engineers and mechanics, depending on the scope of the work that arises.

Energy Services has developed an internal overtime selection process to equitably assign available overtime to its employees. The process is initiated by the “Overtime Availability Declaration” sign-up sheet, which is used as a record for staff who have voluntarily signed-up for available weekly overtime. Available DDC staff who are interested in working overtime are required to sign and date the sign-up sheet. However, because of existing departmental procedure, overtime is always offered first to DDC staff with the lowest number of year-to-date overtime hours accumulated. If an eligible DDC staff member declines the overtime opportunity, another DDC staff member who signed-up for overtime may accept the work.

Overtime opportunities that are declined by eligible DDC employee are documented using the departmental “Overtime Turndown Notes” sheet. This document is used as evidence that the eligible employee has voluntarily declined the overtime opportunity. A DDC supervisor is required to sign the document acknowledging the transfer of overtime hours. Overtime hours worked are recorded using the “DDC Overtime” report. The Senior Administrative Analyst, who submits the biweekly overtime report to the Energy Services Director for review and approval, enters overtime hours into the Kronos System.

Overtime Written Procedures

In order to verify that overtime is adequately documented and approved in advance by Energy Services management, three biweekly overtime periods were selected for audit testing. Seven DDC employees’ overtime hours were evaluated for accuracy against supporting documentation, including the overtime sign-up sheets and overtime turndown reports. Reconciliations were performed of overtime totals from the “DDC Employee Overtime” report to the hours recorded in Kronos System reports to determine their accuracy. In addition, A&AS verified that Energy Services management does not have formal written procedures for biweekly overtime activities.

Campus Policy 360, “Internal Control Guidelines for Department Campuses” requires control activities, including operating procedures to be identified and captured such that it enables management and staff to carry out their responsibilities efficiently and effectively. Without having adequate written procedures for all components of operational processes, efficiency and effectiveness of the overtime process may be affected. Lastly, essential institutional and organizational knowledge could be at risk of loss in the event of staff turnover from Energy Services.

Recommendation: Management should develop and implement formal written procedures for biweekly overtime activities to establish clear responsibilities in all aspects of the overtime process. The written procedure should include overtime eligibility and selection, overtime approval, and overtime verification and reconciliation.

Response: We do have a prescribed overtime procedure, which we will formalize and submit within the next two months (or by August 15, 2021).

Information Technology

WebMeter/WebPU

The WebMeter system is a web-based platform that records utility and energy consumption for all utilities produced and used by the campus. WebMeter also monitors and analyzes utility data that is maintained and managed by Energy Services. In addition, FM Accounting uses the WebPU system to record utility billing. Metering data recorded in WebMeter is used to provide utility consumption data to WebPU to calculate monthly billing for campus customers. User access administration for both WebMeter and WebPU is provided by FM Information Technology (IT) Services based on job function and responsibilities. However, Energy Services and FM Accounting management have the responsibility for authorizing and requesting user access based on job function.

The WebMeter and the WebPU systems and their integration was created in-house by FM personnel for Energy Services operations. FM IT Services uses the Web Security application, another FM created system, to interface with WebMeter and WebPU. Web Security is used to assign user access rights when the department initiates a user access request. Energy Services management or FM Accounting submit user access requests via email to FM IT Services. When an employee no longer requires access or separates from the Energy Services division, a request to cancel access is submitted by Energy Services or FM Accounting personnel via email.

Blackbox

Blackbox is managed by an authorized Energy Services contractor who is located on campus. FM administration of Blackbox user access is not required since the contracted administrator has set-up digital meter reads to be transmitted to Energy Services staff.

Because of system limitations, user access reports could not be generated for the WebMeter, WebPU, and Blackbox systems. However, FM IT Services was able to create an ad hoc user access report for all three systems. A&AS reviewed these user access reports to evaluate them for appropriate access based on job functions. Ten users were listed on the report and all ten were selected for audit testing. Audit review of user information within the UCPath System was performed to verify that each user has appropriate access based on their job responsibilities. The results of the review are summarized below:

* Nine users maintained an active employment status.
* One user was identified by Energy Services as their current contractor, Worley, which administers and programs the Blackbox System.

There were no significant control weaknesses noted in this area.

210212-4

REP