FACILITIES MANAGEMENT

##### DESIGN, PROJECT MANAGEMENT & OPERATIONS

ENERGY SERVICES

AUDIT REPORT #17-2101

Audit & Advisory Services
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Background

In accordance with the UCLA Administration fiscal year 2016-17 audit plan, Audit & Advisory Services (A&AS) conducted an audit of internal controls and associated business practices of Energy Services. Energy Services is a unit administered by the Design, Project Management & Operations division within the Facilities Management (FM) department.

Energy Services is responsible for providing the campus with reliable and cost efficient energy resources. Electricity and thermal energy (chilled water and steam) are produced at the central Cogeneration Plant on campus. Energy Services actively manages the Plant to maintain long-term viability and lower life cycle costs. Energy Services contracts with utility companies and other service providers to supply fuel, and to provide additional energy resources to supplement those produced by the Cogeneration Plant. Additionally, Energy Services monitors campus energy usage to support expense recharge and recovery, and projects future energy requirements for necessary infrastructure and capacity expansions.

Annually, the Cogeneration Plant produces over 250 gigawatt hours of electricity, 730 billion British Thermal Units (BTUs) of heating energy in the form of steam, and 870 billion BTUs of chilled water to power the campus air conditioning systems. The central system provides heating and cooling to over 60 buildings on campus. Since its completion in 1994, plant management and operational responsibilities of the Cogeneration Plant have been outsourced to WorleyParsons (the Operator), a third-party independent contractor. The Energy Services Director manages the Operator and evaluates its performance.

The Energy Services unit is staffed by three senior engineers, one assistant engineer, one senior administrative analyst, and managed by a Director, who reports to the Design, Project Management & Operations division Director.

Purpose and Scope

The primary purpose of the review was to ensure that the Design, Project Management & Operations organizational structure and controls related to the administration of Energy Services are conducive to accomplishing its business objectives. Where applicable, compliance with campus and University policies and procedures was also evaluated.

The scope of the audit focused on the following areas:

* Recharge Billing
* Capital Project Temporary Utility Usage
* Information Systems

The review was conducted in conformance with the *International Standards for the Professional Practice of Internal Auditing* and included such tests of records, interviews, and other auditing procedures considered necessary in achieving 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 the administration of energy service activities. However, controls and business practices could be further strengthened by implementing the following:

* Reconcile physical meter read data to utility recharge billing job numbers to verify the billings are consistently performed every month. All reconciling items should be supported by adequate documentation and resolved on a timely basis.
* Reexamine flat utility rates for those identified utility customers whose flat rates have remained unchanged for numerous years.
* Develop written departmental guidelines for campus service providers and utility customers when submitting billing and information requests to FM Customer Relations for energy services.
* Maintain a list for broken meters that contains current relevant information and accurate condition descriptions.
* Develop and maintain an electronic log to provide tracking and control for meter read estimates and related annotations.
* Develop and implement recharge billing guidelines for new capital construction and renovations to properly account for actual utility consumption on a timely basis.

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

Audit Results and Recommendations

Recharge Customer Meter Reading

Interviews were conducted with Energy Services management and staff to obtain an understanding of the direct digital control and analog meter reading processes for steam, chilled water, and electricity. An observation was performed of the September 2016 meter reading process by an FM electrician. The meter read process includes utilizing a meter route log sheet, reading the meters, and recording the meter read data on the log. An additional observation was performed with the assistance of Energy Services staff for the electronic downloading of the direct digital control data and related processing. Controls over the review and approval of meter read data prior to the billing process were evaluated for adequacy. Procedures regarding meter read adjustments and related review and approval controls were evaluated to ensure appropriateness. Supporting documentation for meter reads and related adjustments was assessed, on a sample basis, to verify completeness and accuracy.

Once the meter read data is approved, it is entered into the WebMeter system. WebMeter, which is on the meter side of the utility consumption recharge billing process, allows the meter read data to be uploaded to the WebPU system. WebPU, which is on the accounting side of the utility consumption recharge billing process, then calculates the amount of recharges billed to the utility customer. The calculation utilizes the uploaded meter read data, approved rate for the utility type, and space inventory building fundability profile information. Once the calculations are performed, the amounts due from the utility customers are again reviewed and approved to ensure completeness and accuracy.

A&AS verified that the meter reading process is generally efficient and effective, meter read data is reviewed and properly approved prior to the billing process, and adjustments to the meter read data, if any, are appropriately approved and adequately documented with an explanation.

There were no significant control weaknesses noted in this area.

Space Analysis Data Building Fund Profile

A&AS held discussions with Energy Services management and staff, FM Finance & Information Services (F&IS) management, and FM Space Inventory management to gain a general understanding of the campus’ space inventory building fundability process. In the context of Energy Services utility recharge billing, Space Inventory determines a rechargeable utility customer’s percentage of assignable square footage based on a building’s fundability profile. Generally, fundability refers to state funds, student fee funds, and “other funds.” The category, “other funds,” indicates a recharge entity. Based on the campus tenant(s), buildings can have a mix of funding sources and various assignable or unassignable square feet per tenant. The percentage of assignable square footage is an element in the calculation of amount(s) due for utility consumption for rechargeable utility customers.

Campus buildings typically have a designated coordinator that tracks and monitors changes in the building’s occupants. When a change in occupancy occurs, the designated coordinator notifies Space Inventory of any changes to the fundability profile and/or the assignable square footage. Additionally, the UC Office of the President requires that space inventory information be updated and verified on an annual basis. The annual updating and verification of space inventory is controlled by the Assistant Vice Chancellor of Facilities Management via an annual call letter. Designated staff within campus departments are issued a user ID and password for the Space Inventory online system. Any changes to the department’s room use, occupant and/or assigned space can be requested utilizing the online system or manually by responding to the call letter. A&AS determined that space inventory data is maintained on a current basis and adjusted timely when changes occur.

There were no significant control weaknesses noted in this area.

Rate Calculation Methodology

Energy Services management provided supporting documentation for the April 2015, May 2016, and January 2017 utility rate revisions approved by the Assistant Vice Chancellor of Facilities Management. In all cases, the revised rates are computed by factoring in current and projected commodity costs, including increased rates for purchased natural gas, electricity, and water. A&AS review of the supporting documentation disclosed that the recharge rate calculation methodology is established, properly approved, adequately documented and disseminated to the appropriate campus departments.

There were no significant control weaknesses noted in this area.

Recharge Customer Billing

Energy Services and F&IS management and staff provided A&AS personnel with an understanding of the recharge utility customer billing process. Electronic meter read and billing data was obtained from both Energy Services and F&IS management. Additional discussions with Energy Services and F&IS management and staff were held to obtain a detailed explanation regarding the electronic data provided.

The data elements utilized are from both the meter side (Energy Services) and accounting side (F&IS) of the billing process, and include data elements, such as unique meter and utility customer billing identifiers, recharge rates, meter read dates, billing month, amount billed, etc. The electronic information was queried to verify the accuracy of amounts billed; utilization of approved recharge rates; space inventory building fundability profile percentages; and completeness and timeliness of the monthly utility recharge billings. Due to the availability of electronic meter read and recharge billing information, A&AS was able to test approximately 1,700 billing line items for Energy Services recharge utility customers from January 2016 to June 2016. From the Campus Online Financial system, verification was performed for the overall timeliness of the utility customer recharge billings based on the General Ledger posting date. Adjustments (if any) were evaluated to ensure propriety, appropriate approval, and adequacy of supporting documentation. The following was noted:

Utility Billings

Six of eight (75%) utility customer recharge billings reviewed were not consistently billed month-to-month because of past billing errors. For the five-month period tested, job numbers 0T5089, 0T5304, FT5908, and FT5922 were not billed for an aggregate total of 10 months. This gap in billing was due to earlier inaccurate meter reads which resulted in over billings for these four job numbers. Because of the overbillings, the monthly billings were not processed until the current meter measurements surpassed the previous over-billed meter readings. Job number FT6001 was not billed for three months during construction for unknown reasons. And lastly, job number FT6021 was not billed for eight months because the account had been deactivated for unknown reasons.

Recommendation: Management should ensure that all utility recharge billings are consistently performed every month by performing a reconciliation between the physical meter reads and the actual utility job numbers recharged. All reconciling items should be documented, resolved and reviewed by appropriate level management. Rather than skip monthly processing of billing job numbers due to billing errors, management should prepare adjusting entries within the same billing period to account for any inaccuracies on a timely basis. These adjusting entries should be supported by adequate documentation, including management approval and date.

Secondly, for all construction or renovation projects where utilities were not billed, management should coordinate with the project manager and/or the project’s related department to resolve any non-billing for consumed utilities. An agreement to resolve accumulated utility expenses should be in writing and approved by all parties. And lastly, management should perform a periodic verification of all deactivated recharge utility job numbers to ensure all active accounts that should be billed are being billed. By ensuring the completeness of Energy Services recharge billings and any related adjustments, management will be properly recognizing revenue when earned, reducing the risk of providing free utility energy to bona fide paying customers, and ensuring the validity, accuracy, and reliability of financial information.

Response: We concur with the recommendation. Utility recharge billings are now being reconciled against physical meter reads. The reconciliation will be in arrears (typically 30 days) however, there may be occasion when discrepancies require investigation beyond this timeframe.

We also concur that any adjustments will be supported with the appropriate documentation to justify the change. Improvement in this area will necessitate modifications to the WebPU billing program managed by Finance & Information Systems (F&IS). The program uses meter data collected by the WebMeter program to create customer level utility bills. Energy Services is providing support to F&IS in developing an upgrade to the WebPU billing program to include reconciliation of meter readings with billed consumption. This will facilitate skipping of monthly billing. F&IS anticipates implementing the upgrade by June 2017.

As regards the construction and renovation issue: Energy Services has developed a process flow chart to address this issue. FM Finance has reviewed the process and is working to implement by June 2017. Energy Services will provide support as needed.

Flat Rate Recharge Customer Billing

Utilizing the electronic billing data described earlier in the Recharge Customer Billing section of this report, and the campus General Ledger, A&AS identified the following flat rate recharge customers: Associated Students UCLA (ASUCLA), Health Sciences Bookstore and Café Synapse, Department of Laboratory Animal Management (DLAM), Intercollegiate Athletics’ Morgan Center, Drake Stadium and Men’s Gyms, Campus Mail Services, Anderson Business School Café Roma, UCLA Vending Services, and the Center for Health Sciences. Flat rate recharge customer billings from January 2016 to June 2016 were reviewed for timeliness, accuracy, and periodic rate review. The July 2015 submission approved by the Policy Committee on Sales and Service Activities and Service Enterprises (POSSSE) was reviewed for relevant information regarding flat rate recharge Energy Services customers. The most recent flat rate agreement between F&IS and the Center for Health Sciences (CHS) was reviewed for adequacy.

A&AS verified that flat rate utility customers are properly recharged on a timely basis for their utility consumption. However, the following was also noted:

Flat Rate Customers – Rates Unchanged for 10 Years

Eight of nine (89%) utility customers that are being charged flat rates for their utility usage have not had their rates changed or adjusted for inflation for at least 10 years. Generally, flat rates are charged for utility consumption when it is not practical to perform regularly-scheduled monthly measurements. However, non-flat rate customers have had their utility rates adjusted 3% to 5% on a periodic basis to recover the cost of utility-related commodities. By not adjusting the flat rates to customers as the cost of the commodity increases, flat rate customers are essentially receiving a discount on their utility bills as compared with non-flat rate customers. This in-turn creates inequity between utility customers paying rates that have been adjusted for inflation or increased utility costs and those whose rates that have remained unchanged for similar commodities.

Recommendation: Management should reexamine flat utility rates for utility customers whose flat rates have remained unchanged for numerous years, and then make appropriate rate adjustments that reflect the current cost of providing the energy consumed. Additionally, whenever utility rates are being reviewed for possible adjustment, both flat rate and non-flat rate customers should be considered equally. Any rate adjustments deemed necessary should be communicated in writing to both types of customers. By doing so, management will be more effective in recouping the expense which was incurred in acquiring, producing, and maintaining the energy consumed by its flat rate customers.

Response: We concur. The department is working to modify flat utility rates by June 2017. The department is also reviewing its processes regarding flat rate billing in general including frequency of rate consideration, equality of customers and overall communication regarding adjustments.

Billing Administration

Energy Services management and Customer Relations personnel worked with A&AS to determine workflow procedures within the customer service function relating to Energy Services. Controls and procedures over customer service requests for Energy Services support and information were evaluated for adequacy relative to utility meter reads and billing, new meter installation and commissioning, capital projects and renovations, and other relevant processes. Information required to be provided to Customer Relations by other campus units for fulfilment of timely Energy Services service requests was identified in conjunction with the responsible staff and reviewed for adequacy. The following was noted:

Energy Services and Customer Relations Guidelines

There are no established written guidelines regarding submission of billing and service requests by campus service providers (Energy Services, F&IS) and utility customers when contacting the Customer Relations unit. Additionally, there are no designated contacts in either Energy Services or F&IS to address customer requests for utility recharge billing questions and information.

Due to the variations in workflow and timing of campus services being provided, (such as new construction, renovations, meter installs, and tenant changes) there are also variations in the types of information required to be provided by the campus service providers to Customer Relations personnel. Having available complete and timely information helps to facilitate an effective customer service response. Also, since the utility recharge billing is comprised of two distinct functions (meter reading and recharge billing preparation) there are also two distinct FM divisions that own those processes and the related information.

UCLA Policy 360, Internal Control Guidelines for Campus Departments (UCLA Policy 360), requires periodic review of department operating procedures to ensure internal controls are being followed and improving on those controls when weaknesses are detected. UCLA Policy 360 also requires control activities, including operating procedures, be identified and captured such that it enables management and staff to carry out their responsibilities efficiently and effectively. Without adequate written guidelines for key operational processes, efficiency and effectiveness of Energy Services customer service will be affected.

Recommendation: Management should develop written guidelines to be shared among campus service providers (Energy Services, F&IS, Customer Relations) and utility customers to strengthen controls over customer requests for Energy Services recharge billing information and service. The guidelines should define each campus service provider’s role within a workflow and identify relevant information to be provided to Customer Relations personnel based on the request type. For requests specific to Energy Services recharge billing, points of contact within Energy Services and F&IS should be identified and provided to the Customer Relations unit to increase efficiency in the customer service process. Additional information identified as relevant within other various workflows should be vetted by appropriate stakeholders to ensure completeness.

Response: We concur. Energy Services has begun developing step-by-step procedures for efficiently moving customer requests through the FM organization with specific focus on improving efficiency and overall response. Energy Services will support FM Customer Services and F&IS in development of their respective internal processes in support of these improvements. The process will center all inquiries to be administered by F&IS. A designated F&IS manager will be responsible for financial responses and a designated senior engineer within Energy Services will be responsible for responses involving meter accuracy or consumption inquires. FM is targeting to have this process in place by June 2017.

Broken Meters

Discussions with Energy Services management and staff helped to strengthen our understanding of broken utility meters: how they are identified, repaired or replaced on a timely basis, and meter inventory in general. Procedures utilized to ensure broken meter billing adjustments, if any, were reviewed to ensure adequacy. For broken recharge meters, utility consumption is determined utilizing a “standardized estimate” calculated by an Energy Services engineer. The Energy Services broken meter list dated July 29, 2016, was obtained and evaluated to identify broken recharge meters. A&AS performed an analysis of cross-referencing the broken meter list to the July 2016 meter read route sheets and other historical electronic meter read data to identify meters appearing on the broken meter list but are still being read, and/or the last known meter read dates. Further analysis was performed on the broken meter list to determine completeness and adequacy of the information. The following were noted:

A. Broken Meter List Accuracy and Other Information

Energy Services’ broken meter inventory list does not identify the date when meters were identified as broken. Recharge meters have priority for repair or replacement since their data is utilized for utility revenue recharge purposes. Based on the broken meter inventory list, recharge meters #1940 and #1648 have been broken since February 2010.

On the broken meter list, the term “broken” is used generically to describe meters with various conditions such as: meter not accessible; meter removed; meter needs to be located; confirm meter building; and meter is off. The use of a single term to describe numerous meter conditions impairs management’s ability to prioritize recharge meters for repair purposes as well as knowing the true status of a particular meter.

Periodic reconciliations are not being performed between the broken meter inventory list and the printed meter read route sheets to confirm accuracy of meter information/condition/status and number of items, etc. If a meter is identified as being broken on the meter read route sheets, then data gathering might not be performed.

Inventory records for all meters are not being maintained on a current basis with relevant operational information. These records should describe meter status/condition, confirmed location, and meter hierarchy including parent meter and sub-meter identification.

Recommendation: Energy Services management should ensure that its broken meter list is maintained with current relevant information and accurate condition descriptions for the meters listed. The listing should identify the date of meter breakage and if the meter is rechargeable to support prioritization of meter repair or replacement. A periodic reconciliation of information recorded on the broken meter list and the meter read route sheets should be performed to ensure accountability over completeness of each meter read cycle and increase efficiency and effectiveness of the meter read process.

Additionally, adequate meter inventory records with relevant meter information should be maintained on a current basis. Meter inventory information should include whether or not the meter is rechargeable, its operational status, confirmed location, meter hierarchy including parent meter and sub-meter identification, etc. Maintaining adequate meter inventory records will strengthen controls over meter inventory management.

Lastly, Energy Services management should consider developing written procedures for broken meters to identify and capture broken meter processes, assign responsibility for those processes, and enable staff to perform their responsibilities efficiently and effectively. By not establishing and maintaining adequate written procedures, management is unable to ensure the operational effectiveness of overall meter inventory management.

Response: We concur and starting in October 2016, during the initial stages of the audit, Energy Services recognized this as a weakness in our system and began developing a list of broken meters. The list is now compiled and routinely updated. The list is regularly maintained by the department’s energy analyst. Steps have also been taken to modify the meter program to include a newly added field that displays the status of the meter (e.g. broken, out-of-service, active, etc.).

We concur that Meter records should include all necessary information in support of the meter reading and billing process. Efforts are currently underway with FM-Information and Technology Systems to modify its meter reading program to include these additional fields. Concurrently, Energy Services is updating meter nameplate data and establishing meter hierarchies as part of a larger effort allow for all state funded buildings to be read via an automated process.

We concur that there should be documented procedures relating how and who is responsible for the repair in a safe and expedited manner. Energy Services will take the lead in writing the generic work procedures that establish a clear step-by-step chain of responsibility through the repair/replacement of the metering system.

The department is targeting completing updated all meter records by June 2018.

B. Meter Read Estimations

Management is unable to identify and track meter read estimations. Due to the current system’s limited functionality, once an estimated utility consumption amount and annotation are entered into the system, they are no longer available for monitoring and control purposes. The estimated amounts and related calculations are considered adjustments and are expected to be documented, approved, and reconciled since they function as source information to the University’s General Ledger. UCLA Financial Policy, Principles of Data Integrity, paragraph III.1.1, “… all employees who prepare financial transactions provide adequate descriptions, explanations, and back-up documentation sufficient to support post-authorization review and any internal or external audit.”

Recommendation: Management should maintain an electronic log that captures relevant information for all estimated meter reads and related annotations until such a time that its system can provide tracking and other control functionality for meter read estimations and related annotations. Information should contain sufficient detail to adequately identify each adjusting estimate and be readily retrievable for inquiry and reporting purposes. By doing so, Management will be strengthening its internal controls over Energy Services recharge billing and promoting adherence to financial policy.

Response: We concur. This functionality would be best executed via software tools embedded in the WebMeter or WebBilling programs. In the interim, Energy Services is in the process of developing a manually updated historical log of meter estimations and adjustments of meter reads. The log will be maintained by the senior energy analyst until such time the WebMeter or WebBilling programs can be enhanced to provide this functionality. The department is supporting F&IS in deploying respective software features embedded in the WebMeter and WebBilling programs by June 2017.

Capital Project Temporary Utility Usage

A&AS conducted meetings with FM management and staff, and selected personnel within UCLA Capital Programs to obtain an understanding of utility consumption and measurement from the beginning of a capital construction project through the transition to the project owner or occupant. Key elements of the workflow were identified to determine the ownership and timing of each workflow step, including timely set-up of the appropriate full accounting unit (FAU), commissioning of utility meters, and timely billing for utility consumption. A&AS also obtained and reviewed information from both Energy Services and F&IS regarding recent capital construction projects and related utility consumption recharge billing.

Construction Recharge Billing Procedures

Recharge billing guidelines for temporary utility consumption during capital construction projects, renovations, and changeover to occupants have not been developed and implemented. Currently, the process among Energy Services, Capital Programs, Facilities Management, and the project client, is based on general project knowledge and workflow through the life of the project. Properly accounting for actual temporary utility consumption requires the commissioning of meters at the appropriate time. This results in recharge billings based on true measurements rather than estimations. Properly accounting for utility consumption at the point of occupancy requires timely changeover to the client’s FAU. Uniform, consistent, and timely recharge billings for utility consumption requires the entities that drive a project’s workflow to work together for that mutual purpose.

Essential institutional and organizational knowledge could be at risk of loss in the event of staff attrition and/or unexpected separation from the participating campus departments. By developing and implementing such guidelines, management will be strengthening the controls over the accuracy and timely recognition of budgeted construction utility consumption costs, reducing the amount and frequency of “estimated” utility consumption costs, and promoting timely transition to the utility customer FAU for the post-occupancy utility consumption costs.

Recommendation: Management should develop and implement recharge billing guidelines for new capital construction and renovations to properly account for actual utility consumption on a timely basis. These guidelines should be vetted by Energy Services, Capital Programs, and Facilities Management, as necessary, to ensure mutual agreement regarding the essential components and reasonableness of the procedures. The guidelines should promote clarity, consistency and timeliness, and include the following:

* Identification of new capital construction projects and renovation work orders.
* Determination of recharge billing FAUs for utility consumption during construction and post-occupancy.
* Creation of recharge billing job numbers.
* Commissioning of job site meters.
* Process controls, adequate monitoring, and proper administration.

Response: We concur. Prior to the initiation of the audit, Energy Services began creating a new business process that would deal with issues of setting-up new billing accounts prior and post-occupancy as it relates to capital construction projects. A flow chart has now been developed which provides for different types of metering work. F&IS is working to utilize these processes for major renovations and to account for all facets of the meter reading process from installation to billing considerations as the customer ownership changes occur during the construction cycle.

F&IS is currently in the process of identifying appropriate resources for each functional step so the process can be implemented and is targeting completion by June 2017.

Information Systems

Access rights granted to Energy Services staff and applicable F&IS staff for the WebMeter and WebPU systems were tested for appropriateness. Access rights are granted by F&IS management based on job responsibilities. The active user list for both the WebMeter and WebPU systems dated August 29, 2016, was obtained from F&IS management and reviewed. For the seven names on the list, A&AS queried the campus Oasis system to determine whether they are active employees requiring related systems access. For each active employee identified as requiring WebMeter or WebPU systems access, A&AS compared their job title on the list for reasonableness relative to the work-based need for having such access. Those job titles include responsibilities for utility meter data collection, analysis and processing, and utility recharge billing, analysis and administration. Controls over usernames and passwords were also assessed.

There were no significant control weaknesses noted in this area.

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