



July 7, 2014

Mr. Elmo Cavin,
Executive Vice-President of Finance & Administration
TTUHSC, Lubbock and Regional Campuses

RE: FY 2014 – 3rd Quarter Update (Posted on TTUHSC website)

Texas Tech University Health Sciences Center (TTUHSC) Physical Plant continues to promote energy conservation measures and strategies and seek new ideas to reduce consumption and improve building system efficiencies. We continue to undergo programmatic changes and steady growth, which are expected to increase the overall energy consumption. This includes the purchase of an 8,500 sf clinic building in Midland, and increased lab requirements.

A. Energy Consumption & Goals

Attached is Exhibit I where our 3rd Quarter FY2014 consumption breakdowns can be found. Exhibit I also includes previous quarters, overall totals for each utility and energy equivalents to facilitate comparisons between quarters and annual totals.

Additionally, Table I (Page 2) shows a breakdown for each type of utility in kBtu per square foot. The energy units were converted to kBtu to allow for comparisons of the various energy forms and then divided by the appropriate campus square footage to obtain an energy utilization index in kBtu/square foot. A negative % change indicates a decrease in consumption, while a positive number indicates an increase compared to the previous year.

In the 3rd Quarter FY2014, the campus consumed 57.5 kBtu/sq ft, which has remained relatively unchanged as compared to the 3rd Quarter FY2013. Cooling Degree Days (CDD) for the 3rd Quarter FY2014 has decreased by 10% compared to 3rd Quarter FY2013. Heating Degree Days (HDD) for the 3rd Quarter FY2014 has decreased by 2% compared to 3rd Quarter FY2013.





Table I: Campus Energy Use (kBtu/Sq ft): March - May

Utility	FY13 Actual	FY14 Actual	% Change
Electricity	15.66	16.34	04.34%
Nat. Gas	06.96	06.50	-06.61%
Steam	16.60	16.62	00.12%
Chilled Water	18.27	18.01	-01.42%
Total	57.49	57.47	-00.04%

B. Current Energy Reduction Plans

We have identified the following projects for potential consideration in reducing the campus energy consumption. Projects will be prioritized based on acceptable payback period and availability of funding. Below is a partial list and status of projects that are currently being planned, designed and/ or implemented.

1. Install new direct digital control (DDC) system at the Women’s Health and Research Institute (WHRI) building, Amarillo. Project includes replacement of two air handling units and associated terminal boxes, upgrade of four air handling units, and four pumps. *First phase of the work is in progress. Rest of the work is pending funding.*
2. XCEL Energy has offered at no cost for re-commissioning or retro-commissioning of buildings in Amarillo. Accordingly we have submitted preapproval application and letter of authorization to Willdan Energy Solutions for two of our buildings in Amarillo. *Project was approved and ESA Inc. has completed field testing and evaluation.*
3. Replace two air handling units in Lubbock HSC, which are old, inefficient and unreliable, by new energy efficient air handling units. *Project is currently in construction phase.*
4. Replace exterior building lights by LED light fixtures at the HSC buildings in Lubbock. *Project is currently on hold.*
5. Complete installation of occupancy sensors for automatic lighting control. *Project is being implemented through new construction and renovations.*
6. Operationally the campus should use F28T8 lamps for office/laboratory/classroom and other such areas, and F25T8 lamps for hallway/toilet and other areas which need less illumination. This is being done to comply with the lighting power density requirement of the state energy code. *Project is ongoing.*





7. New energy efficient LED lights, for both interior and exterior building use, are being tested for performance and reliability. *Project is in testing and analysis phase.*
8. Upgrade pneumatic control systems to direct digital control systems. This is being done as and when funding is available and during most renovations.
9. Install energy (Btu) meters for chilled water and hot water flow at JW Clinic, Midland. *Project is completed.*

C. Future Energy Reduction Plans

The 'Resource Efficiency Plan' (REP) submitted every two years in October, identifies a comprehensive list of projects and measures for the campus energy conservation. The REP is prepared in accordance with 34 TAC, Chapter 19. The REP is used for both short and long term planning purposes and energy reduction activities.

Semiannual Fleet Fuel consumption is to be reported in the April and October reports.

Your consideration of this update and information is appreciated.

Sincerely,

George G. Morales, P.E.
Assistant Vice-President for Physical Plant & Support Services

Enclosure: EXHIBIT 1





EXHIBIT I

FY2013 QUARTERLY ENERGY CONSUMPTION					
ENERGY	1st Quarter FY 2013	2nd Quarter FY 2013	3rd Quarter FY 2013	4th Quarter FY 2013	Total FY 2013
ELECTRICITY, kWh	9,961,497	9,281,450	9,451,056	10,142,533	38,836,536
NATURAL GAS, ccf	105,983	188,840	139,483	69,027	503,332
STEAM, mlb	27,847	45,730	30,454	19,735	123,766
CHILLED WATER, tn-hr	3,423,810	2,878,852	3,136,115	4,546,264	13,985,041
ENERGY EQUIVALENT, (kBtu)	112,910,024	131,837,252	113,400,174	113,059,768	471,207,218
N:B: Natural Gas is used to produce the Thermal Energies of Steam and Chilled Water					

FY2014 QUARTERLY ENERGY CONSUMPTION					
ENERGY	1st Quarter FY 2014	2nd Quarter FY 2014	3rd Quarter FY 2014	4th Quarter FY 2014	Total FY 2014
ELECTRICITY, kWh	9,116,782	9,432,830	9,909,266		28,458,878
NATURAL GAS, ccf	120,690	185,263	130,836		436,789
STEAM, mlb	33,370	56,556	30,641		120,567
CHILLED WATER, tn-hr	3,656,414	3,017,009	3,106,077		9,779,500
ENERGY EQUIVALENT, (kBtu)	118,365,875	142,978,420	113,218,426		374,562,721
N:B: Natural Gas is used to produce the Thermal Energies of Steam and Chilled Water					

FY2014 QUARTERLY COST INFORMATION						
ENERGY	1st Quarter FY 2014	2nd Quarter FY 2014	3rd Quarter FY 2014	4th Quarter FY 2014	Total FY 2014	Budget FY 2014
ELECTRICITY	\$604,925	\$609,827	\$701,780		\$1,916,532	\$2,675,769
NATURAL GAS	\$78,771	\$117,531	\$93,770		\$290,072	\$321,427
STEAM	\$335,078	\$610,793	\$376,096		\$1,321,967	\$1,296,722
CHILLED WATER	\$437,313	\$361,993	\$425,852		\$1,225,158	\$1,798,920
TOTAL	\$1,456,087	\$1,700,144	\$1,597,498		\$4,753,729	\$6,092,838

