University of Massachusetts
Amherst

Physical Plant Division
policy and procedures manual

UT.13.B.003.A
April 10, 2014

From: Ray Jackson, Assistant Director for Utilities

Subject: Estimating Daily and Monthly Usage Values When Meters Fail

Purpose: To establish a procedure to estimate the daily or monthly usage value in the event that an electric, water, or steam meter on a building fails.

Action:

1. Estimate of Monthly Usage - In the event that an electric, water, or steam meter on a building fails, the following procedure will be used to estimate the monthly usage value for the month:

   A. Water meter: A monthly water meter estimate shall be calculated by taking the last good months usage value, dividing it by the number of days in that month, and calculating a "daily average usage" amount for that building. Then take that daily usage amount and multiply it by the number of days in the month in question.

   B. Steam meter: A monthly steam meter estimate shall be calculated by determining the building base usage, that which is independent of heating and cooling needs, and adding a heating or cooling component based on degree days. The base use will be derived from a month of similar occupancy. The heating or cooling component will be derived from the most recent heating or cooling month with good data, assuming that heating or cooling use above the base use is proportional to heating or cooling degree days. The calculated use will then be the base use plus the degree day dependant heating or cooling use, using the actual degree days for the month being calculated.

   C. Electric meter: A monthly electric meter estimate shall be calculated by determining the building base usage, that which is independent of heating and cooling needs, and adding a heating or cooling component based on degree days. The base use will be derived from a month of similar occupancy. The heating or cooling component will be derived from the most recent heating or cooling month with good data, assuming that heating or cooling use above the base use is proportional to heating or cooling degree days. The calculated use will then be the base use plus the degree day dependant heating or cooling use, using the actual degree days for the month being calculated.

2. Estimate of Daily Usage - In the event that an electric, water, or steam meter on a building fails, the following procedure will be used to estimate the daily usage value for the day:

   A. A daily water meter, electric meter or steam meter use shall be calculated as the average value between the previous day value and the following day value or

   B. The average value between the corresponding weekdays (if it is a weekday) or weekend days (if it is a weekend day) values of the month.
3. **In the event more than sixteen (16) days data are missing in a month**, Physical plant shall decide which of the above calculation approach (1 or 2) to use to estimate the monthly water, steam or electric use.

**Distribution:**

- Director
- Assistant/Associate Director
- Executive Assistant
- All Managers
- All Supervisors