This is a guidance document with sample specification language intended to be inserted into project specifications on this subject as appropriate to the agency's environmental goals. Certain provisions, where indicated, are required for U.S. federal agency projects. Sample specification language is numbered to clearly distinguish it from advisory or discussion material. Each sample is preceded by identification of the typical location in a specification section where it would appear using the SectionFormat™ of the Construction Specifications Institute; the six digit section number cited is per CSI Masterformat™ 2004 and the five digit section number cited parenthetically is per CSI Masterformat™ 1995.

SECTION 01 92 00 (SECTION 01800) – FACILITY OPERATION

SPECIFIER NOTE:
performance: Operation of facilities directly impacts the performance of the facilities. Even the best of designs, if poorly operated, will fail to achieve the intended efficiencies.
Different systems will require different maintenance and operation procedures. Such instructions should be collected in the Operations and Maintenance Manuals; refer to Section 01 78 23 (01830) Operation and Maintenance Data.
All facilities should be monitored to assess how closely actual operation conforms to the intended design. This Section includes requirements for monitoring and reporting the performance of energy systems and water systems.

PART 1 GENERAL

1.1 SUMMARY

A. Section includes:
1. Administrative and procedural requirements for operation of the project after commissioning.
a. Monitoring and reporting energy usage.
b. Monitoring and reporting water usage.

B. Related Sections:
1. 01 78 23 (01830) Operation and Maintenance Data
2. 01 90 00 (01810) – Commissioning
3. 22 05 00 (15050) – Common Work Results for Plumbing
4. 23 05 00 (15050) – Common Work Results for HVAC
5. 26 05 00 (16050) – Common Work Results for Electrical

1.2 DEFINITIONS

A. Basis of Design - The basis of design is the documentation of the primary thought processes and assumptions behind design decisions that were made to meet the Owner's Project Requirements. The basis of design describes the systems, components, conditions and methods chosen to meet the intent. Some reiterating of the Owner's Project Requirements may be included.

B. Owner's Project Requirements - a dynamic document that provides the explanation of the ideas, concepts and criteria that are considered to be very important to the Owner. It is initially the outcome of the programming and conceptual design phases.

1.3 COORDINATION

A. Coordinate with commissioning of facility.

1. Basis of Design and Owner's Project Requirements: Identify Owner's Project Requirements and Basis of Design utilized in commissioning for comparison with actual energy and water usage data.
2. Final Commissioning Report: Review the final Commissioning Report to confirm initial actual performance of the building systems in reference to the Owner's Project Requirements and contract documents. Identify discrepancies, if any.
3. Operation and Maintenance Records: Review operation and maintenance records to identify problems, if any, with routine operation of energy and water systems.

SPECIFIER NOTE:
USGBC - LEED v3.0 requires that certified projects commit to sharing with USGBC all available actual whole-project energy and water usage data for a period of at least 5 years. Sharing this data includes supplying information on a regular basis in a free, accessible, and secure online tool or, if necessary, taking any action to authorize the collection of information directly from service or utility providers.

[B. Coordinate with USGBC. Submit actual energy and water usage data to USGBC for minimum 5 years after LEED certification is awarded.]

1.4 QUALITY CONTROL

SPECIFIER NOTE:
Portfolio Manager is an interactive management tool that allows the user to track and assess energy and water consumption of a building in a secure online environment. Portfolio Manager calculates the building's greenhouse gas emissions (including carbon dioxide, methane, and nitrous oxide) from on-site fuel combustion and purchased electricity and district heating and cooling. Portfolio Manager also enables tracking of avoided emissions from any Renewable Energy Certificates. Refer to https://www.energystar.gov/istar/pmpam/ to access Portfolio Manager.
The methodology for calculating greenhouse gas emissions in Portfolio Manager was designed to be consistent with the Greenhouse Gas Protocol developed by the World Resources Institute and World Business Council for Sustainable Development, and is compatible with the accounting, inventory and reporting requirements of EPA's Climate Leaders program, as well as other state and NGO registry and reporting programs. For more detailed information on emissions calculations, refer to the Technical Description of Greenhouse Gas Emission Calculations
The building performance is not compared to the other buildings entered into Portfolio Manager. Instead, statistically representative models are used for comparison against similar buildings from a national survey conducted by the Department of Energy's Energy Information Administration. This national survey, known as the Commercial Building Energy Consumption Survey (CBECS), is conducted every four years, and gathers data on building characteristics and energy use from thousands of buildings across the United States.

Commercial buildings eligible to receive a rating, representing over 50 percent of US commercial floor space, are:
- Bank/Financial Institution
- Courthouse
- Hospital (acute care and children's)
- Hotel
- House of Worship
- K–12 School
- Medical Office
- Municipal Wastewater Treatment Plant
- Office
- Residence Hall/Dormitory
- Retail Store
- Supermarket
- Warehouse (refrigerated and non-refrigerated)

For those buildings that are not eligible to receive a rating, EPA has created a list of reference energy performance targets. These are based on average energy use calculated across different types of

buildings. These energy performance targets are not normalized for climate nor adjusted for activities which may affect energy use. All targets are expressed in energy use intensity and are derived from the Commercial Buildings Energy Consumption Survey.

A. EPA Portfolio Manager: Utilize Portfolio Manager to compile and report:
   1. Energy:
      a. Actual annual whole-building energy usage.
      b. Estimated annual whole-building greenhouse gas emissions.
      c. National average comparison of energy performance to buildings of similar type.
      d. Energy Performance rating.
   2. Water:
      a. Actual annual whole-building water usage.
      b. Actual annual water usage by category for: Indoor Use, Outdoor Use, Combined Indoor/Outdoor Use, and Wastewater.
      c. National average comparison of water performance to buildings of similar type.
      d. Water Performance rating.

1.5 SUBMITTALS

SPECIFIER NOTE:
EO 13423 directs Federal agencies to "provide reports on agency implementation of this order to the Chairman of the Council [on Environmental Quality] on such schedule and in such format as the Chairman of the Council may require; and … provide information and assistance to the Director of the Office of Management and Budget, the Chairman of the Council, and the Federal Environmental Executive.
Refer to http://www.wbdg.org/sustainableEO
Additionally, under the Sustainable Building requirements per Guiding Principle #2 Optimize Energy Performance, EO 13423 directs Federal agencies to "Enter data and lessons learned from sustainable buildings into the High Performance Buildings Database."

Executive Order 13514; *Federal Leadership in Environmental, Energy, and Economic Performance*; was signed on October 5, 2009. http://www.ofee.gov/execorders.asp It expands upon the environmental performance requirements of EO 13423.
http://www1.eere.energy.gov/femp/regulations/printable_versions/eo13423.html
EO 13514 sets numerous Federal requirements in several areas, including:
- Federal agency heads must designate a senior management official to serve as Senior Sustainability Officer accountable for agency conformance, reporting to the Chair of the Council on Environmental Quality (CEQ) and the Director of the Office of Management and Budget (OMB). The Senior Sustainability Officer shall prepare targets for agency-wide reductions in 2020 for greenhouse gas (GHG) emissions and shall prepare and submit a multi-year Strategic Sustainability Performance Plan.
- Agency efforts and outcomes in implementing EO 13514 must be transparent and disclosed on publicly available Federal Web sites.
- OMB must prepare scorecards providing periodic evaluation of Federal agency performance. Scorecard results must be published on a publicly available Web site.

Documentation of environmental procedures can assist in required Agency reports.

A. Energy Data: Compile annual energy usage. Include data from all energy meters such that data accounts for all energy use in the building regardless of fuel type. Include data as follows:
   1. Tabulate minimum 11 full consecutive calendar months of energy data for all active meters. If there are multiple meters, there must be 11 consecutive and overlapping months.
   2. No individual electrical meter data entry can be for a period longer than 65 days.

B. Water Data: Compile annual water usage. Include data from all water meters such that data accounts for all water use in the building. Include data as follows:
   1. Categorize data four major categories: Indoor Use, Outdoor Use, Combined Indoor/Outdoor Use, and Wastewater.
   2. Tabulate minimum 11 full consecutive calendar months of water data for all active meters. If there are multiple meters, there must be 11 consecutive and overlapping months.
   3. No individual water meter data entry can be for a period longer than 65 days.

C. Statement of Energy Performance:
   1. EPA Portfolio Manager: Enter energy data into the Portfolio Manager to produce a Statement of Energy Performance. Refer to Appendix A for a sample.
   2. Provide copy of Basis of Design. Indicate deviations, if any, as evidenced in the final commissioning report, operation and maintenance records, and previous Portfolio Manager Statements.

SPECIFIER NOTE:
USGBC - LEED v3.0 requires that certified projects share actual whole-project energy and water usage data for a period of at least 5 years via an online tool or directly from service or utility providers. As of November 2009, USGBC has not published a required format or designated an approved online tool for submittal.

[3. USGBC-LEED v3.0: Enter energy data into USGBC-approved reporting template and submit to USGBC.]

D. Statement of Water Performance:

SPECIFIER NOTE:
Portfolio Manager tracks water use in four major categories: Indoor Use, Outdoor Use, Combined Indoor/Outdoor Use, and Wastewater. As of November 2009, EPA is still developing this program to parallel the Energy program. EPA will add the ability to benchmark water use in other ways (e.g., Indoor Use per Occupant). Data is entered in the same way as for energy meters. Water usage entered into Portfolio Manager does not affect the energy performance rating.

   1. EPA Portfolio Manager: Enter energy data into the Portfolio Manager to produce a Statement of Water Performance.
   2. Provide copy of Basis of Design. Indicate deviations, if any, as evidenced in the final commissioning report, operation and maintenance records, and previous Portfolio Manager Statements.

SPECIFIER NOTE:
USGBC - LEED v3.0 requires that certified projects share actual whole-project energy and water usage data for a period of at least 5 years via an online tool or directly from service or utility providers. As of November 2009, USGBC has not published a required format or designated an approved online tool for submittal.

[3. USGBC-LEED v3.0: Enter water data into USGBC-approved reporting template and submit to USGBC.]

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

OMB No. 2060-0347

STATEMENT OF ENERGY PERFORMANCE
Office Sample Facility

Building ID: 1678984
For 12-month Period Ending: May 31, 2009[1]
Date SEP becomes ineligible: September 28, 2009
Date SEP Generated: August 27, 2009

Facility
Office Sample Facility
1234 Main Street
Charlotte, NC 28227

Facility Owner
Sample Owner
1500 Test Avenue
Charlotte, NC 28227
555-555-5555

Primary Contact for this Facility
Jane Smith
1500 Test Avenue
Charlotte, NC 28227
555-555-5555
jsmith@jsmith.com

Year Built: 2000
Gross Floor Area (ft²): 53,232

Energy Performance Rating[2] (1-100) 85

Site Energy Use Summary[3]	
Electricity - Grid Purchase(kBtu)	2,288,770
Natural Gas (kBtu)[4]	1,162,996
Total Energy (kBtu)	3,451,766

Energy Intensity[5]	
Site (kBtu/ft²/yr)	65
Source (kBtu/ft²/yr)	166

Emissions (based on site energy use)	
Greenhouse Gas Emissions ($MtCO_2e$/year)	409

Electric Distribution Utility
Duke Energy Carolinas, LLC

National Average Comparison	
National Average Site EUI	102
National Average Source EUI	261
% Difference from National Average Source EUI	-36%
Building Type	Office

Professional Engineer Stamp

Signature: _____

Based on the conditions observed at the time of my visit to this building, I certify that the information contained within this statement is accurate and in accordance with the PE Guide.

Meets Industry Standards[6] **for Indoor Environmental Conditions:**

Ventilation for Acceptable Indoor Air Quality	**Yes**
Acceptable Thermal Environmental Conditions	**Yes**
Adequate Illumination	**Yes**

Professional Engineer
License Number: 0000203
State: NC
John Doe
33 Country Lane
Charlotte, NC 28227
555-555-7788

Notes:
1. Application for the ENERGY STAR must be submitted to EPA within 4 months of the Period Ending date. Award of the ENERGY STAR is not final until approval is received from EPA.
2. The EPA Energy Performance Rating is based on total source energy. A rating of 75 is the minimum to be eligible for the ENERGY STAR.
3. Values represent energy consumption, annualized to a 12-month period.
4. Natural Gas values in units of volume (e.g. cubic feet) are converted to kBtu with adjustments made for elevation based on Facility zip code.
5. Values represent energy intensity, annualized to a 12-month period.
6. Based on Meeting ASHRAE Standard 62 for ventilation for acceptable indoor air quality, ASHRAE Standard 55 for thermal comfort, and IESNA Lighting Handbook for lighting quality.

The government estimates the average time needed to fill out this form is 6 hours (includes the time for entering energy data, PE facility inspection, and notarizing the SEP) and welcomes suggestions for reducing this level of effort. Send comments (referencing OMB control number) to the Director, Collection Strategies Division, U.S., EPA (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460.

EPA Form 5900-16

Tracking Number: SEP200908270001037162