SECRETARY OF THE ARMY
WASHINGTON

04 JUN 2014

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: Army Directive 2014-10 (Advanced Metering of Utilities)

1. Purpose. This directive establishes policy and assigns responsibilities for installing advanced meters on utility systems. Related references are at the enclosure.

2. Applicability. This policy applies to all permanent Active Army, Army National Guard and U.S. Army Reserve installations, sites and facilities operated and/or maintained by Federal funds in and outside the continental United States, hereafter referred to as "installations." This policy does not apply to contingency bases or Civil Works facilities. For the purposes of this policy, a "facility" is defined as any building that is owned, constructed, renovated, leased or purchased in part or in whole for use by the Federal Government or any building that receives Federal funds to support utility expenses.

3. Policy

a. The Army's policy is to appropriately manage our natural resources (references a and b). An essential part of managing those resources is to quantitatively determine how much energy and water we are using through the use of advanced meters (references c and f). Advanced meters are electronic meters that, at a minimum, have the capability to measure and record use at regular intervals and communicate that data to the Army's enterprise Meter Data Management System (MDMS) (references h and i). Accurate meter data is fundamental to the Army's ability to identify cost-effective energy and water investments and greatly reduces the personnel time associated with manually entering and reporting utility data (reference g). Advanced meters and MDMS must comply with Department of Defense guidance on cybersecurity and the risk management framework for information technology (references d and e). Additional information on utilities metering is in references j and k.

b. The Army will maximize the effect of its investment in advanced meters and minimize the overall cost of purchasing and installing meters. Strategies that must be considered include:

(1) ensuring that meters provide only the necessary capability for the targeted application. Utility-grade meters capable of measuring harmonics, power factors, reactive power and other advanced capabilities may not be necessary for many facilities covered by this directive.

(2) leveraging the use of building automation systems or energy management control systems where possible.

(3) fitting existing analog meters with pulse counters that can communicate with MDMS.

(4) contracting for meter installation across multiple installations, which may provide cost savings through the use of larger contracts.

(5) incorporating meters in larger capital improvement projects. Advanced meters will be installed and connected to MDMS on all new construction projects, major renovation projects, Energy Conservation Investment Program projects and third-party financed projects. Major renovation projects include changes to a building that provide significant opportunities to improve energy and water efficiency. These projects may include, but are not limited to, heating, ventilation and air-conditioning; lighting; building envelope; and other building components that have a major effect on energy and water use.

(6) coordinating with all utility privatization, Residential Communities Initiative and Privatized Army Lodging vendors to leverage existing meter data.

c. Utility meters with remote communications capability must be installed in each building for each utility serving the building (for example, district steam, district hot and chilled water, electricity, natural gas, water or fuel oil) in the appropriate standard units of measure (kilowatt-hour, kilowatt, cubic feet, gallons, etc.) to capture the consumption levels prescribed in paragraphs 3c(1)–(4) where it is cost-effective, as determined by the U.S. Army Corps of Engineers' Meter Program Manager and approved by the Office of the Assistant Chief of Staff for Installation Management (OACSIM). The Meter Program Manager will evaluate cost-effectiveness on a case-by-case basis. In doing so, the manager will consider not only the initial cost of meter installation, but the value and benefit from the use of meter data to identify and execute energy- and cost-saving projects.

(1) Electricity. Advanced meters will be installed in individual facilities to accurately capture a minimum of 60 percent of electricity use by 2020 with a goal of 85 percent at the installation level by the end of fiscal year 2020, based on available funding.

(a) Energy-intensive facilities should be submetered where practical to identify electricity use by individual tenants and high-use operations or processes, such as data centers, laboratories and manufacturing processes. Major mechanical and electrical subsystems also should be submetered.

(b) Operational energy uses will be metered where practical. "Operational energy" is defined as the energy required for training, moving and sustaining military forces and weapons platforms for military operations. The term includes energy used

by tactical power systems, generators and weapons platforms. Examples of training uses of operational energy are range complexes, virtual collective simulators (both fixed and mobile), individual- and crew-level non-systems-specific and systems-specific simulators (including hardstands where tactical equipment plugs in for power to support embedded training systems), constructive simulations and large live training complexes, such as home station forward operating bases and urban operations training facilities.

(2) Natural Gas. Advanced meters will be installed on individual facilities to accurately capture a minimum of 60 percent of natural gas use by 2020 with a goal of 85 percent at the installation level by the end of fiscal year 2020, based on available funding. Where practical, facilities should be submetered to identify high-use operations or processes.

(3) District Steam, Hot and Chilled Water. Advanced meters will be installed on individual facilities and distribution lines connected to district steam, hot and chilled water systems to accurately capture at least 60 percent of steam, hot and chilled water use by 2020 with a goal of 85 percent at the installation level by the end of fiscal year 2020. Where practical, facilities should be submetered to identify high-use operations or processes.

(4) Potable and Non-Potable Water. Advanced meters will be installed on individual facilities and landscape irrigation systems to accurately capture a minimum of 60 percent of potable and non-potable (industrial, landscaping and agricultural) water use by 2020 with a goal of 85 percent at the installation level by the end of fiscal year 2020, based on available funding. In addition, meters will be installed at on-post water sources and distribution systems to effectively identify supply quantities and system losses by the end of fiscal year 2020. Where practical, facilities and systems should be submetered to identify high-use operations or processes.

d. Meters must be connected to the Army's MDMS as quickly as practical after installation using an accredited metering system. All metering systems with advanced meters will be configured to automatically communicate their data to MDMS. At a minimum, advanced meters will provide hourly data and record 15-minute usage profiles. These profiles will be used to assess building performance at least monthly.

e. The MDMS will be capable of electronically storing data for at least 10 years and creating user reports showing a minimum of hourly, daily, monthly and annual consumption.

f. Installations with privatized utilities will work through the contracting officer to partner with the owner of the distribution system to share existing meter data or negotiate acceptable terms for the installation of new meters and cost sharing.

4. Communications Strategy and Plan for Reimbursable Tenant Meters. Not later than 12 months after publication of this directive, OACSIM will write and update, as needed, a communications strategy for Army metering and a plan for metering reimbursable tenants. The plan will explain why meters are needed, when they will be installed and for which utility service(s) and how reimbursable tenants will be billed for each utility service.

5. Meter Data Management Plan. Not later than 9 months after publication of this directive, OACSIM will develop a meter data management plan that describes how the Army plans to cost-effectively deploy metering systems with advanced meters and how it intends to use the meter data to manage energy and water use. The plan will include all utility meters and establish guidance on which installations and their facilities have a priority. The plan will be updated as needed, but not less than every 3 years.

6. Reporting. OACSIM will brief the Assistant Secretary of the Army (Installations, Energy and Environment) (ASA (IE&E)) quarterly on the Army's metering program and implementation progress. The brief may be included as part of other OASCIM quarterly briefs to the ASA (IE&E). OACSIM will develop appropriate performance measures and use these measures in reporting progress.

7. Budgeting. OACSIM will identify the requirements to support the Army's metering program through the planning, programming, budgeting and execution process. In consultation with ASA (IE&E), OACSIM will provide annual guidance to the Corps of Engineers' Meter Program Manager concerning the priorities and level of effort that will be achieved each fiscal year. Installations will be provided resources, depending on availability, to support the provisions of this directive and the meter data management plan.

8. Proponent. The proponent for this directive is the Assistant Chief of Staff for Installation Management, who will incorporate the guidance in this directive into the next revision of Army Regulation 420-1 (Army Facilities Management) as soon as practical.

9. Rescission. This directive is rescinded upon publication of the revised regulation.

John M. McHugh

Encl

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REFERENCES

a. The Energy Policy Act of 2005, Pub. L. No. 109-58 (2005).

b. Energy Independence and Security Act of 2007, Pub. L. No. 110-140 (2007).

c. DoD Instruction 4170.11 (Installation Energy Management), December 11, 2009.

d. DoD Instruction 8500.01 (Cybersecurity), March 14, 2014.

e. DoD Instruction 8510.01 (Risk Management Framework (RMF) for DoD Information Technology (IT)), March 12, 2014.

f. Memorandum, Under Secretary of Defense (Acquisition, Technology and Logistics), April 16, 2013, subject: Utilities Meter Policy.

g. AR 420-1 (Army Facilities Management), 12 February 2008, including Rapid Action Revision No. 2 issued 24 August 2012.

h. Executive Order 028-12, 162247Z Nov 11, subject: Program Management of the Army Central Meter Program.

i. Fragmentary Order (FRAGO) No. 1 to HQDA EXORD 028-12, 111810Z Apr 12, subject: Program Management of the Army Central Meter Program.

j. Metering Best Practices: A Guide to Achieving Utility Resource Efficiency, Release 2.0, U.S. Department of Energy Federal Energy Management Program, August 2011.

k. ASHRAE Standard 189.1-2011 (Standard for the Design of High-Performance Green Buildings).