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SECRETARY OF THE AIR FORCE**

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Civil Engineering



**IMPLEMENTING UTILITIES AT U.S.
AIR FORCE INSTALLATIONS**

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This Air Force Pamphlet (AFPAM) supports Air Force Instruction (AFI) 32-1061, *Providing Utilities to U.S. Air Force Installations*. It provides guidance to implement the provision of utilities at U.S. Air Force Installations for the consistent and effective management of AF energy and utility programs. Managers may use this AFPAM to help evaluate, document, and evaluate energy/utility requirements and consumption; report data to Air Force Civil Engineer Center (AFCEC); and propose actions to AFCEC to improve energy/utility efficiencies per Department of Defense Instruction (DoDI) 4170.11, *Installation Energy Management*. Management efforts ensure AF utility infrastructure is secure, safe, reliable, and efficient, utility commodities are procured effectively and efficiently; energy and water conservation efforts are maximized; and renewable energy sources and energy efficient facility designs achieve Department of Defense (DoD) and Headquarters United States Air Force (HQ USAF) energy and utility goals. Installation energy and utility management practices also consider and facilitate readiness and sustainability policies and the installation mission. This AFPAM applies to all AF Active, Reserve, and Air National Guard Civil Engineer units. Ensure that all records created as a result of processes prescribed in this publication are maintained IAW Air Force Manual (AFMAN) 33-363, Management of Records, and disposed of IAW the Air Force Records Disposition Schedule (RDS) in the Air Force Records Information Management System (AFRIMS). Use AF Form 847, *Recommendation for Change of Publication*, to submit any recommended changes, clarification requests, or command supplements to this AFPAM to AFCEC/CN, 139 Barnes Drive, Suite 1, Tyndall Air Force Base, FL, 32403-5319. Forms may be electronically forwarded to AFCEC/CN Corporate Mailbox, AFCEC.CN.WORKFLOW@us.af.mil.

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Chapter 1

ROLES AND RESPONSIBILITIES

1.1. Headquarters U. S. Air Force, Directorate of Civil Engineers (HQ USAF/A4C). Formulates, interprets, and implements policy; provides oversight; approves execution plans and schedules; monitors process; and advocates for resources for the AF facility energy and utility program.

1.2. The Air Force Civil Engineer Center (AFCEC). Implements AF facility energy and utility policy, develops and implements energy and utility service procedures and guidance, provides technical experts to assist with utility rate negotiation, collaborates with the Major Commands (MAJCOMs) and installations to develop and validate current projects and energy/utility requirements, ensures validated energy/utility requirements are programmed within the Future Year Defense Program as part of the annual Program Objective Memorandum process, and serves as the focal point to manage and distribute energy and utility funding IAW HQ USAF/A4C requirements.

1.3. The Base Civil Engineer (BCE). Acquires and manages energy and utilities consistent with the policies and guidance established in AFI 32-1061, and designates an Energy Manager to coordinate engineering, operations, real property, financial management, contracting and legal activities required for the management, supply, purchase, and sale of utility services.

1.4. The Installation Energy Manager. Manages the energy program IAW AFI 32-1061; implements Energy Independence and Security Act (EISA) 2007 Section (§) 432, *Management of Energy and Water Efficiency in Federal Buildings*; and reports monthly utility consumption and cost data to the MAJCOM and in the Air Force Energy Reporting System (AFERS) no later than 60 days after the end of month of consumption or end of the established billing cycle.

Chapter 2

DETERMINING UTILITY SERVICE REQUIREMENTS

2.1. Helpful Tips for Determining Utility Service Requirements.

- 2.1.1. Validating that a utility requirement exists.
- 2.1.2. Surveying the utility requirement site for special problems or conditions.
- 2.1.3. Evaluating and considering alternative ways of acquiring utility service for large loads and deciding which is the most economical and feasible.
- 2.1.4. Using utilities supplied by other government agencies when feasible.
- 2.1.5. Exploring privatization initiatives before requesting military construction appropriations to construct or expand a government-owned plant or system. Refer to the *AFCEC Utilities Privatization (UP) Playbook* for details on privatization.
- 2.1.6. Not constructing or expanding government-owned utility infrastructure when economical utilities are available from commercial sources and the reliability of the purchased commercial utility service is consistent with mission requirements.
- 2.1.7. Increasing the reliability of purchased utilities using priority restoration of service agreements with the utility suppliers. Energy security should be considered and supported in utility agreements.
- 2.1.8. Preparing utility service contract specifications, making sure that consumption and demand estimates are realistic. Attachments 4, 5, 6, 7, and 8 contain utility service contract specification formats for consideration for potable water, sewage, steam, electricity, and natural gas.
- 2.1.9. Checking applicable published rate schedules to decide the most favorable rate schedule. If no published rate schedule is compatible with government demand and consumption requirements, consider assisting base contracting in negotiating a favorable special rate.

Chapter 3

TYPES OF PURCHASED UTILITIES

3.1. Electricity. Measured in kilowatt-hours (KWH) (energy) and kilowatts (KW) (demand).

3.2. Natural Gas. Measured in millions or thousands of cubic feet (MCF or KCF) and in million British thermal units (MBTU). The therm (thm) is a unit of heat energy equal to 100,000 British thermal units (BTU).

3.3. Water. Measured in thousands of gallons (KGAL) or KCF.

3.4. Wastewater (also called Sewage). Measured in KGAL or KCF.

3.5. Steam. Measured in pounds (lbs) and in MBTUs.

3.6. Conversion Charts. Conversion charts for energy units may be found at:

http://www.think-energy.net/energy_units.htm.

Chapter 4

TYPES OF UTILITY CONTRACTS

4.1. Support Agreements. Support agreements are used when acquiring utilities from another Federal agency.

4.1.1. When acquiring utilities from another AF organization or DoD agency, a written support agreement is used to record the type and conditions of service (Ref: DoDI 4000.19, *Support Agreements*).

4.1.2. When acquiring utilities from another Federal agency, a written interagency support agreement is used to record the type and conditions of service (Ref: FAR Part 17.5, *Interagency Acquisitions Under the Economy Act*).

4.2. Indefinite Term Contracts. An indefinite term contract means a month-to-month contract for utility services that may be terminated by the Government upon proper notice. The notice period for termination may be anytime between 30 days and 1 year. (Note: This provision is not in conflict with the time limitations of FAR 41.103.)

4.2.1. IAW Defense FAR Supplement (DFARS) Part 24.205, an indefinite term contract shall be used when it is considered in the Government's best interest.

4.2.2. If a base contracting office is considering terminating an indefinite term contract for utility service, the base legal office, AFCEC/CN, and Air Force Legal Operating Agency, Environmental Law and Litigation Division – Utility Law Field Support Center (AFLOA/JACE – ULFSC) must be notified as soon as possible and provided the indefinite term contract for review and comment.

4.3. Direct Supply Natural Gas Program (DSNGP). The DoD policy is to competitively acquire natural gas via the DSNGP. DSNGP is managed by Defense Logistics Agency (DLA) Energy. DLA Energy awards a contract to a natural gas supplier and an installation may request to be a part of that contract via task order. DLA arranges for transportation of the natural gas commodity via interstate pipelines to local distribution companies. The base arranges for transportation of the commodity from the interstate or intrastate pipeline through the local distribution company (LDC) system to the base distribution system as required. DLA evaluates the installation's requirements.

4.4. Separate Utility Service Contracts (See FAR, Parts 41. 103(a)(2) and 41.305, and DFARS Part 241, *Acquisition of Utility Services*). A separate utility service contract is used when the GSA area-wide contract is not available or separate contract is found to be more advantageous to the government. With these contracts it is advisable to:

4.4.1. Ensure utility service contracts, agreements, and modifications are acceptable before sending to the base contracting officer for execution.

4.4.2. Negotiate the lowest overall cost commensurate with the installation's mission requirements.

4.4.3. Negotiate and add special provisions.

4.4.4. Add the installation's utility service specifications.

4.4.5. Ensure the negotiated payment date is no earlier than 30 days from the date of billing. If the payment date must be earlier than 30 days from the date of billing, work with the utility provider on alternative charges in lieu of the earlier payment date. The AF and Defense Finance and Accounting Services validation and routing processes make it difficult to meet a payment date earlier than 30 days, thus making AF susceptible to late fees.

4.4.6. Pay the bills in a timely manner avoiding late fees.

Chapter 5

ACQUIRING ELECTRIC SERVICE

5.1. Electric Service Considerations. Consider using the following options, presented in order of preference, when determining best value for acquiring new electric service for the main base.

5.1.1. Supplier's (public or municipal utility) transmission voltage to supplier-owned substation, with distribution through a supplier- or privately owned distribution system.

5.1.2. Supplier's transmission voltage to a government-owned substation, with the delivery point on the supplier's side of the substation transformer to a government-owned distribution system.

5.1.3. Supplier's transmission voltage to a supplier-owned substation (with a separate charge to the government for use of the facilities), with the delivery point on the government side of the substation transformer to a government-owned distribution system.

5.1.4. Supplier's transmission voltage directly to a government-owned distribution system when government system primary voltage is the same as the supplier's transmission voltage.

5.1.5. Supplier's secondary voltage directly to a building load for small, localized loads.

5.1.6. Government-owned central plant to a government-owned substation with distribution through a government-owned distribution system.

Chapter 6

ACQUIRING NATURAL GAS SERVICE

6.1. Natural Gas Service Considerations. Consider using natural gas when it is the most economical fuel available. DLA Energy awards contracts for directly purchasing natural gas from producers, thus the Air Force would be purchasing the commodity directly from the producer. The organization also arranges transportation of the natural gas via interstate pipelines to LDC and bases manage the transportation of the commodity through the LDC system to the base distribution system. Transportation may be acquired under a separate contract. The following options, in preferred order, help determine the best method for acquiring natural gas service:

- 6.1.1. Local utility supplier's (public or municipal utility) natural gas distributed using on-base distribution through a supplier or privately owned system.
- 6.1.2. Local utility supplier's (public or municipal utility) natural gas distributed using on-base distribution through a government-owned system.
- 6.1.3. Competitively procured natural gas using on-base distribution through a supplier or privately owned system.
- 6.1.4. Competitively procured natural gas using on-base distribution through a government-owned system.

Chapter 7

ACQUIRING WATER AND SEWAGE SERVICE

7.1. Water and Sewage Service Considerations. Consider the following options when determining best value for acquiring water and sewage service:

7.1.1. For water for the main base, in order of preference:

7.1.1.1. Supplier's (public or municipal utility) water with distribution through a supplier or privately owned distribution system.

7.1.1.2. Supplier's water with distribution through a government-owned distribution system.

7.1.1.3. Government-owned water supply facilities through a government-owned distribution system.

7.1.2. For sewage service for the main base, in order of preference:

7.1.2.1. Supplier's (public municipal utility) treatment facilities with collection through a supplier- or privately owned collection system.

7.1.2.2. Supplier's treatment facilities with collection through a government-owned collection system.

7.1.2.3. Government-owned treatment facilities through a government-owned collection system.

Chapter 8

CONNECTION AND TERMINATION CHARGES OR LIABILITY

8.1. Acquiring Utility Service. Consider acquiring utility service without a FAR Part 41 termination liability or connection charge. When a utility supplier builds electric generating capacity or transmission lines specifically for the installation, the termination liability amount or the connection charge can be substantial. If possible, negotiate a termination liability charge before offering a connection charge.

8.2. Funds for Termination Charges. Funds for termination charges are typically obligated when the actual termination of the contract occurs (Ref: Title 31 United States Code (USC) §1501, *Appropriation Accounting (Documentary Evidence Requirement for Government Obligations)*; and DoD 7000.14-R, *DoD Financial Management Regulation, Volume 3, Budget Execution - Availability and Use of Budgetary Resources*).

8.2.1. When using a definite-term utility service contract or any utility service contract with a termination liability, the minimum charge provision (i.e., “the minimum monthly charge”) means any minimum charges of the supplier’s rate schedule that become payable if the government reduces its usage below the minimum or terminates the service.

8.2.2. Consider negotiating a refundable connection charge, if possible.

8.3. Connection Charge or Termination Liability. It is not advisable to base a connection charge or termination liability on the utility supplier's entire construction cost. The connection charge is never more than the installation cost less net salvage value. Labor only installation costs do not have a salvage value. The supplier recovers some of the construction costs in the rate schedules. In arriving at fair and reasonable construction costs, consider the following:

8.3.1. Permanency of load, annual load factor, and potential growth.

8.3.2. Proposed construction cost applicable to AF and to other customers.

8.3.3. Utility supplier's line extension policy and the amount of expansion cost included in rate schedules.

8.3.4. Special considerations that the utility supplier accords to other large industrial customers.

8.3.5. Added tax cost to the utility supplier if there is a contribution in aid of construction tax.

Chapter 9

RATE SCHEDULES

9.1. Utility Supplier Rate Schedules. Some utility suppliers offer several rate schedules for the same conditions of service. Consider reviewing the utility supplier's rate schedules to determine which rate schedule applies to the base and results in the lowest cost to the government. Some utility suppliers offer a choice of energy and demand charges to large customers. One rate schedule includes high-energy charges with low-demand charges and another rate schedule may include low-energy charges with high-demand charges. If possible, use the previous 12 months of (historical) billing data to determine which rate schedule offers the lowest cost.

9.2. Time-of-Day Rates. Some utility suppliers require large consumers to take service on a time-of-day rate, and some offer it as an alternative to other rates.

9.2.1. Time-of-day rate schedules specify on-peak, off-peak, and a partial (or shoulder) peak period. The rates for energy and demand used during the peak period are higher than the rates for energy and demand during the off-peak period. The start, end, and duration of the peak period differ greatly among suppliers. When the installation shifts usage from the on-peak period to the off-peak period, utility bills can be reduced using time-of-day rates.

9.2.2. Potential savings under a time-of-day rate schedule are calculated using 12-month historical and 12-month projected billings for the installation.

9.3. Interruptible Rates. Some utility suppliers offer interruptible service at a substantial savings over firm (non-interruptible) service. Interruptible service permits the utility supplier to temporarily discontinue service during peak demand hours. The utility supplier will give advance notice, ranging from a few minutes to several hours. The cost savings is proportional to the amount of advance notice the Air Force receives before the utility interruption.

9.4. Demand Ratchets. Some rate schedules contain a demand ratchet provision, which is a means of applying a minimum billing to a customer who may have inconsistent or seasonal energy requirements. The utility supplier incurs costs by making the utility available to the AF when it needs it.

9.4.1. If the existing rate schedule contains a demand ratchet and the base Energy Manager expects 1 month of abnormally high demand (caused by a construction project, equipment testing, or other factors), consider asking the contracting officer to negotiate with the utility supplier to avoid unnecessary demand charges for the next 12 months. The factor causing unusual demand can be estimated in advance for successful negotiations with the utility supplier.

9.4.2. If the existing rate schedule contains a demand ratchet and the BCE expects the installation's load to decline (caused by demolition of buildings, installation of renewable energy source, or other factors), consider asking the contracting officer to negotiate with the utility supplier to delete the demand ratchet from the rate schedule.

9.5. Standby Rates. Standby rates require the utility supplier to stand ready to serve the government's load when the Air Force's utility production facilities do not operate. The utility supplier provides a connection for use by the Air Force, and this connection is used when the Air Force is unable to produce enough energy from their own resources.

9.6. Franchise Fee. Most utility suppliers obtain franchises from incorporated cities and towns within their service territory and may pay a fee based on the dollar amount of the utility bill for the use of the municipality's alleys, streets, and rights-of-way where distribution lines are located. Sometimes the supplier lists the franchise fee separately on the bill. Franchise fee issues are highly dependent on local and state tax law. It is advisable to refer questions on whether an installation should pay such amounts to the installation legal office or the AFLOA/JACE-ULFSC.

Chapter 10

RATE CHANGES

10.1. Requests for Rate Changes. Requests for rate changes are processed differently for utility suppliers not subject to an independent regulatory body than for suppliers subject to an independent regulatory body.

10.2. Power Marketing Administrations. Power Marketing Administrations request rate changes through a public participation process. They publish proposed rate changes in the Federal Register for public comments, and then hold public meetings to receive and discuss all oral and written comments. After considering all comments, they decide, approve, and publish the new rate.

10.3. Utility Suppliers Not Subject to a Regulatory Body (Non-regulated Utility). FAR 52.241-8 clause, "Change in Rates or Terms and Conditions of Service for Unregulated Suppliers," is typically used in utility service contracts. This clause allows either party to request a change in rates or terms and conditions of service, with both parties agreeing to enter into good faith negotiations concerning such changes. When the utility service contract provides for rate negotiation, the installation:

10.3.1. Provides notification of a rate increase as follows:

10.3.1.1. Installations located outside the continental United States request AFCEC/CNR assistance, if needed.

10.3.1.2. Installations in the continental United States inform AFCEC/CNR within 24 hours if the potential increase to an installation is:

10.3.1.2.1. Unreasonable, unjustified, or discriminatory

10.3.1.2.2. Four percent (4%) or above in any one year

10.3.1.2.3. An aggregate of 4% or above over the course of 5 years

10.3.2. Does not recognize rate changes for any amount until the parties agree to a mutually satisfactory rate and a date for the new rate to take effect, and then modifies the utility service contract to add the new rate.

10.3.3. Makes payment at the old rate until the contracting officer modifies the utility service contract to add the new rate during this period, ensures the financial manager commits enough funds to cover the possibility of retroactive payment based on the utility supplier's initially proposed rate increase (Ref: DoD 7000.14-R, Volume 3).

10.4. Utility Suppliers Subject to an Independent Regulatory Body (i. e., Regulated Utility). FAR 52.241-7 clause, "Change in Rates or Terms and Conditions of Service for Regulated Suppliers," is typically used in utility service contracts. This clause requires the Air Force to pay for utility service at the regulated rate. Prompt processing of a regulated supplier's request for change in rates is advised.

10.4.1. The BCE should give all known details to the base legal office, base contracting, and AFCEC/CNR within 24 hours of change notification.

10.4.2. AFCEC/CNR then notifies the AFLOA/JACE-ULFSC.

10.4.3. The base legal office informs the AFLOA/JACE-ULFSC of any potential or pending hearings involving base utilities at a public utility commission hearings or state proceedings.

10.4.4. The base legal office informs the AFLOA/JACE-ULFSC of the request for intervention.

10.4.5. Within 1 week of the date that the installation informs AFCEC/CNR of a proposed rate increase, the BCE should provide AFCEC/CNR the following (with information copies to base legal and base contracting):

10.4.5.1. A list of all DoD activities being serviced by the utility company.

10.4.5.2. The date the supplier filed the request for a change in rates with the regulatory body, the assigned docket number, the amount and the percent requested for total company revenue, and the amount and the percent of potential annual impact on the installation.

10.4.5.3. A copy of the supplier's request for a change in rates (obtain from either the supplier or the regulatory body).

10.4.5.4. The date, amount, and percent in total revenue of the supplier's last approved rate increase.

10.4.5.5. A copy of the previous 12 months of utility bills (electric, gas, or water) to AFLOA/JACE-ULFSC in order for them to determine the impact of the proposed utility rate increase and whether or not intervention is warranted.

10.4.5.6. A copy of other rate schedules applicable to the installation that is more economical than the proposed rate schedule, along with a month-by-month comparison. If no other rate schedule is more economical, make a statement to that effect.

10.4.5.7. A list of other Federal agencies and large industrial or commercial consumers receiving service under the same or similar rate schedules.

10.4.6. AFLOA/JACE-ULFSC then informs AFCEC/CNR of its recommendations for AFCEC/CNR to intervene. AFCEC/CNR provides Temporary Duty funding for utility rate intervention support and technical expertise.

10.4.7. If the decision is made to intervene, the Federal executive agency constituting the largest energy user affected by the requested rate change typically takes the lead on any intervention. Where the AF is the largest energy user, AFLOA/ JACE-ULFSC intervenes on behalf of all Federal executive agencies. The AFLOA/JACE-ULFSC attorney is the Federal executive agency's sole representative and will handle all matters before the state regulatory body.

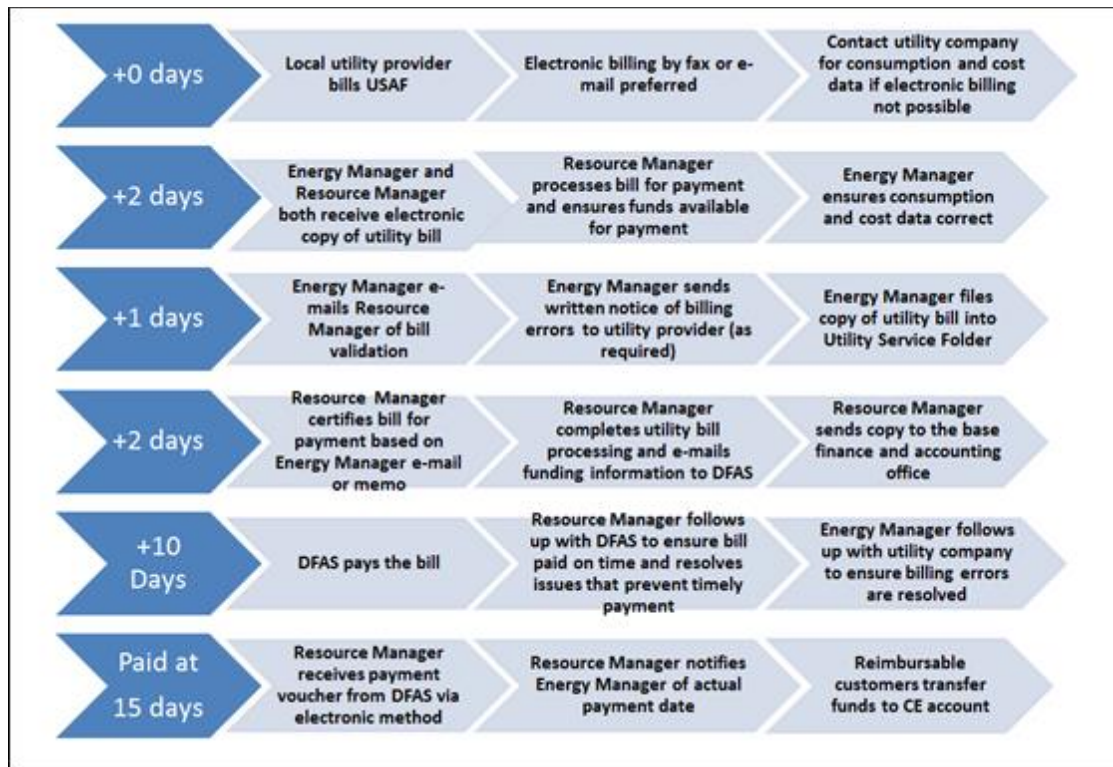
10.4.8. When the independent regulatory body approves and puts a new rate into effect, notify the financial manager of the financial impact and effective date of the new rate.

Chapter 11

UTILITY BILLS AND PAYMENT

11.1. Utility Bill Payment Process. The Financial Management section of the Installations Management Flight coordinates to ensure utility bills are validated and processed for payment to avoid late fees (see Figure 11.1, Model Utility Bill Payment Process). Faster processing is possible using electronic mediums for billing and payment. If a utility provider does not have automatic electronic billing services, the provider can be asked to fax or e-mail a scanned copy of the bill before mailing it.

Figure 11.1. Model Utility Bill Payment Process.



Chapter 12

UTILITY PURCHASE CONTRACT REVIEW

12.1. Utility Contracts. Reviewing utility contracts annually and when a contract is modified ensures the Air Force is acquiring utilities at the most favorable rate available and costs are minimized. The AF Form 3550, *Annual Utility Contract Review for Electric Service*; AF Form 3551, *Annual Utility Contract Review for Gas Service*; and AF Form 3552, *Annual Utility Contract Review for Water and Sewage Service*, are used to document this review.

12.1.1. An analysis of unusual or unexpected change can be done by comparing current cost trends to historical data.

12.1.2. Determining whether current utility service requirements, including quality and quantity of service, are within the estimated demand, consumption, and other contract provisions is also useful. However, reducing estimated maximum demand and consumption in existing contracts to coincide with current actual reduced demand and consumption is not recommended unless such reduction results in a benefit to the government. Such reductions result in the loss of demand or consumption rights in connecting facilities.

12.1.3. Reviewing the utility supplier's applicable rates for the installation's actual usage, conditions, and characteristics of service will help ensure the installation buys utilities at the most advantageous rate schedule.

12.1.4. Reviewing metering and billing procedures will help ensure those procedures are the most advantageous to the government. This can be done by reviewing utility contracts annually and when a contract is modified to ensure the Air Force is acquiring utilities at the most favorable rate available and costs to the Air Force are minimized. Metering provides data that allows scrutiny and correlation to the monthly invoice from the supplier.

12.1.5. Maintaining review documentation and making corrective actions for each discrepancy in the utility service folder will improve procedures.

12.1.6. Providing the base contracting officer a copy of the updated information and a letter with recommended utility contract changes is advisable. When the review shows actual consumption or demand exceeds contract quantities, a new service specification (see Attachments 4, 5, 6, 7, and 8) should be prepared and added to the contract.

Chapter 13

MANAGING UTILITIES

13.1. Producing and Managing Utilities. The Operations Support element of the Operations Flight provides a monthly and annual work order report showing all work completed on utility systems. This could include a variety of account codes depending on the Operations Flight and Financial Management section of the Installations Management Flight. The Operations Flight ensures the work associated with the utility systems is properly and accurately documented into the appropriate information management system database and that labor, materials, equipment, vehicles, and supplies are included in work accountability.

13.1.1. Work associated with utility systems includes (but not limited to) work on piping, lift stations, transformers, valves, lines, conduit, overhead electrical poles, electrical vaults, water wells, water hydrants, sewer manholes, primary power electrical generators, waste water treatment and collection plants, etc. Work on utility systems normally begins five feet away from the exterior wall of a building. Work performed on and in buildings or facilities is not normally a utility cost unless the building is for the exclusive production or distribution of a utility. Street lighting and traffic controls are not considered utility costs so work order information should not include costs for work on these systems.

13.1.2. Sample civil engineer utility account codes and real property category codes useful in analyzing utility costs are in Attachment 2.

13.1.3. A work report includes all costs associated with operations, repair, and maintenance. These costs include:

- 13.1.3.1. Military labor.
- 13.1.3.2. Civilian labor.
- 13.1.3.3. Materials.
- 13.1.3.4. Chemicals.
- 13.1.3.5. Equipment.
- 13.1.3.6. Government owned laboratory.
- 13.1.3.7. Sludge disposal.
- 13.1.3.8. Permit fees.
- 13.1.3.9. Service maintenance contract costs.

Chapter 14

PROVIDING UTILITY COMMODITIES

14.1. Utility Sales Rates Computation. AF Form 3556, *Utility Sales Rates Computation Worksheet*, is used to compute utility rates. The AF Form 3556 also allows monitoring of the impact of utility provider rate changes, which is useful as rate increases/decreases from utility companies of more than 5 percent are passed along to the base customer as they occur. Until this form is updated on the Air Force e-Publishing website, AFCEC should be contacted directly for the current version and for instructions on its use.

14.2. Annual Rate Updates. Annual mandatory rate updates are documented with the AF Form 3555, *Utility Sales Rates*, which offers a comparison of the previous 12 months of actual costs to computed sale rates. Annual updates are effective 1 January of each year.

14.2.1. A copy of the updated AF Form 3555 is provided to the finance office to ensure the form shows the date of rate change and the first billing month of the new rate, and to notify the customer with a memo in their monthly utility bill if utility rates change during the year before 1 January.

14.3. Computing Utility Reimbursement Rates. The most efficient method to calculate utility rates is to use the AF Form 3556. The information below is intended to be used with the form. Utility reimbursement rates are calculated by adding the cost factors in **Figure 14.1, Utility Rate Factors**, and explained in the following paragraphs:

Figure 14.1. Utility Rate Factors.

Customer Classification	Customer	Basic Cost	UP/ESPC/UESC	Connection Fees	Distribution Line Loss	O & M	Other Utilities	Military Labor	Capitalized Charges	Admin/Overhead	Local Prevailing Rate
		Para 14.3.3.	Para 14.3.3.	Para 14.3.4.	Para 14.3.5.	Para 14.3.6.	Para 14.3.7.	Para 14.3.8.	Para 14.3.9.	Para 14.3.10.	Para 14.3.11.
A	Government-Owned MFH	C	N	C	P	SB	P	N	N	N	N
A	Privatized MFH (HP Contractor owns MFH distribution system)	C (1)	N (1)	C (1)	P (1)	SB (1)	C (1)	N (1)	SB (1)	N (1)	N (1)
A	Privatized MFH (UP Contractor or Government owns MFH distribution system)	C	N	C	P	SB (3)	C	N	SB (3)	N	N
B	Non-Federal Commercial	C	C	C	C	C	C	C	C	C	C (2)
C	Non-DOD Federal	C	C	C	C	SB	C	C	N	N	N
D	DOD (including golf courses)	C	C	C	C	SB	C	N	N	N	N
E	MWR Cat. C (except golf courses)	C	N (4)	N	N	N	N	N	N	N	N

C = Charge

N = Not charged

P = Charge only if service is provided through (passes through) the main base distribution or collection system.

SB = Sole Benefit Test. Charge operations, maintenance, and repair for the portion of the system infrastructure owned by the Government and provided solely for the benefit of the customer. See paragraphs 14.3.6.5 and 14.3.6.6 of this AFPAM, and AFI 32-1061 for further clarification with respect to Military Housing Privatization Initiative (MHPI) projects.

(1) If Housing Privatization (HP) contractor purchases the utility commodity directly from the utility company, the base is not the utility provider and no utility sales agreement with the government or reimbursable charges are necessary. Wheeling charges may apply (See paragraph 14.3.12)

(2) Charge the local prevailing rate for similar customer category rate class if higher than the calculated non-Federal rate.

(3) HP contractor pays directly for Operations & Maintenance (O&M) and recapitalization of utility systems provided for the sole benefit of HP.

(4) Do not charge for Energy Savings Performance Contracts (ESPCs) or Utility Energy Service Contracts (UESCs). All actions affecting funding are coordinated with the NAF funds manager.

14.3.1. Capitalized Investment Cost of Facilities. Capitalized costs are directly related to the maximum capacity of the utility system. The total capital investment of the system is found in Real Property Inventories (RPI). The real property manager provides this information to the Energy Manager. Additional information on RPI is available in AFI 32-9005, *Real Property Accountability and Reporting*.

14.3.2. Total Annual Maximum Capacity of Utility System. The total annual maximum capacity is the maximum amount of the utility that a system can carry at a particular moment (in kilowatts, gallons, or MBTUs) multiplied by the total units of time in a year (525,600 minutes or 8,760 hours). Generating capacity denotes the maximum amount of power or commodity that can be produced by a given facility. Load capacity or transmission capacity denotes the maximum amount of energy that can be transmitted through a system or maximum amount of capacity that a utility provider will deliver. Flow capacity is measured in tons, cubic feet or cubic meters, and indicates the maximum amount of gas or liquid that can be transported through a pipeline. Capacity can vary depending on the current state of the system or its capabilities at a given moment, so it is not a fixed or absolute value. For example, a generator's capacity may increase or decrease depending on the type or mixture of fuel used, and a gas pipeline's capacity will vary with changes in the ambient air temperature.

14.3.3. Basic Cost. The basic cost is the total annual cost of a utility purchased and produced divided by the annual total consumption. The basic cost includes ESPC, UESC, and UP costs as shown in **Figure 14.1**.

14.3.3.1. When purchasing utility service, the total annual purchased cost is divided by the annual consumption.

14.3.3.2. If an AF-owned plant generates the utility commodity, the cost of production/generation is divided by the total consumption (or estimated consumption if consumption not metered).

14.3.3.3. When using a combination of AF produced and purchased services, both the purchases and the produced costs are totaled before dividing by the total consumption.

14.3.3.4. Utilities Privatization (UP) Charges. When utility systems on the installation are owned by a UP System Owner, the AF pays for the UP owner to operate and maintain these systems in one of two ways:

14.3.3.4.1. Incremental UP Charges. If the base utility system has been privatized and there are incremental UP charges, the UP cost is calculated by dividing the total annual UP charges by the annual utility system consumption.

14.3.3.4.2. Bundled Commodity UP Charges. If all delivery charges (including charges for on-base distribution) are bundled with the commodity charges, no calculation is necessary; there is no incremental UP charge.

14.3.3.5. ESPC or UESC is used for energy conservation measures. The UESC charges may be included in the monthly utility purchased utility bill as a bundled cost to the AF. ESPC and UESC costs should not added twice to the AF Form 3556 if they are billed as a bundled charge. Until this form is updated on the Air Force e-Publishing website, AFCEC can be contacted directly for the current version.

14.3.3.6. For Morale, Welfare, and Recreation (MWR) Category C activities, reimbursement is not authorized for ESPC/UESC costs associated with utility systems or basic facility components. MWR Category C functionally-unique facility elements may be included in ESPC/UESC projects, in which case nonappropriated fund (NAF) reimbursements would be authorized only for that portion of work done. It is advisable to coordinate all actions affecting funding with the NAF funds manager.

14.3.4. Connection Fee Charges. Connection fees are billed with the monthly purchased utility bill. The MWR and Army and Air Force Exchange Service (AAFES) reimbursable rate is reduced by any connection fees paid by the AF, therefore, subtracting the connection fees from the MWR and AAFES utility reimbursement rate is appropriate as shown in **Figure 14.1**.

14.3.5. Distribution Line Losses or Gains. The energy loss in the AF transmission and distribution system (or gains in the AF collection system) refers to the difference in the amount of energy delivered to a distribution system and amount of energy delivered to the customer. Line loss may be estimated or calculated by a qualified engineer. The AF normally uses an estimated 10 percent energy loss if the amount of loss is unknown.

14.3.5.1. When estimating wastewater services, if the user's flow is metered or estimated from its facilities, the commodity cost is usually increased by 10 percent or the actual infiltration can be determined and used to increase the commodity cost.

14.3.5.2. When estimating industrial wastewater, if the user's flow is estimated from the metered flow through the industrial wastewater treatment plant, the meter readings already include line inflow or infiltration.

14.3.6. System O&M Costs. AF transmission, distribution, and collection system annual O&M costs per unit of service is determined from work order and project information. When AF owns, operates, and maintains a utility distribution system, the base pays these expenses with BCE appropriated funds. O&M costs are tracked by the Operations Flight and Engineering Flight depending on who performs the work and how the work is performed (contract or in-house). Customers receiving utilities from the AF share the burden of these costs depending on the customer's classification as shown in **Figure 14.1**.

14.3.6.1. System O&M costs include all routine maintenance and repair. If the repair does not add value or capacity, does not change the type of system (such as removing an overhead utility line and replacing it with an underground line), or upgrades the system (such as replacing an old distribution system with the same size but new system), consider the repair to be routine maintenance and repair, and included in system O&M cost.

14.3.6.2. Work on the system is performed by work order, service contract, and construction contract. Expenses in this work include labor, equipment, materials, chemicals, supplies, tools, and vehicles. Data applicable to all possible sources of work on the system should be collected and all items of expenses included.

14.3.6.3. Projects are normally programmed a year or more in advance of execution and the Energy Manager should let customers know of future rate increases. Customers can plan for the increased expenses by budgeting for the increased costs. This can be accomplished by preparing AF Form 3556 with the proposed large project costs included

and notifying the customer of the estimated future costs of their utilities. Until this form is updated on the Air Force e-Publishing website, AFCEC should be contacted directly for the current version.

14.3.6.4. The real property capitalized costs definition is used to determine work that is considered O&M and work that is considered a capitalized investment. Military Construction and Restoration & Modernization are usually considered capital investments, while sustainment projects are normally O&M costs. Exceptions may exist, so coordinating with the Financial Management section of the Installations Management Flight is advisable to determine what costs apply to the O&M category and what costs apply to capitalization charges.

14.3.6.5. A “sole benefit test” helps determine what portion of the system and its associate charges apply to DoD, Military Family Housing, MHPI and Federal customers, as shown in **Figure 14.1**. These customers are charged O&M costs for the portion of the system provided solely for their benefit (DoDI 4000.19).

14.3.6.6. For MHPI projects, when the AF retains ownership of the utility systems and there are AF facilities located anywhere within the boundaries of the entire MHPI leased premises, or AF facilities located outside of the MHPI leased premises receiving or able to receive service from a utility distribution system located anywhere within the MHPI leased premises, then the entirety of that utility distribution system does not solely benefit the MHPI project. In such cases, the MHPI project at that installation is entirely exempt from paying reimbursements for any O&M and capitalized investment on any portion of that utility distribution system.

14.3.7. Other Utility Costs. These include the cost of ancillary utility service required to provide the utility service, such as heat for a water treatment plant, the cost of electric power used to pump water, the cost of chilled water or potable water to pump and treat wastewater, and the cost of electricity to operate lift stations and wastewater treatment plants. The “Other Utilities” section of AF Form 3556 is used to compute other utility costs associated with producing and distributing a utility service, as shown in **Figure 14.1**. Until this form is updated on the Air Force e-Publishing website, AFCEC can be contacted directly for the current version.

14.3.8. Military Labor Costs. Military labor costs are included as a separate item in appropriate information management reports from the Operations Flight. Military labor is deducted from rates for DoD Federal agencies as shown in **Figure 14.1**. Civilian and contract labor costs are included in reimbursable rates to all customers, thus a higher resale rate results when using civilian or contract labor for work performed on on-base utility systems.

14.3.9. Capitalized Investment Charges. The capitalized investment charges are passed on to the customer. They are the total capital investment cost divided by the total annual maximum capacity (not output) of the plant as shown in **Figure 14.1**. Capitalized charges do not include all project costs. They include only those projects that meet real property capitalization investment costs.

14.3.10. Administrative Overhead. The Administrative Overhead charge is equal to 3 percent of the total unit costs for all other charges as shown in **Figure 14.1**.

14.3.11. Local Prevailing Rate. The local prevailing rate is the rate the purchaser would pay for a particular class of service if the customer were provided the utility directly by the nearest off-base utility supplier, as shown in **Figure 14.1**. Local prevailing rates are normally published through the local utility company's online website and include categories for various residential types, commercial, industrial, and other special rated categories. Customer service requirements should be analyzed to determine which local rate schedule would apply if the customer purchases the utility directly from a local utility provider. If an applicable rate equals or exceeds the cost to the government for supplying the service, the local utility provider's rate should be used. If two or more rates apply equally but exceed the cost to the government for supplying the service, the lower of the two applicable rates should be used. The local prevailing rate is not used when a Department of Energy (DOE) Power Marketing Administration is one of the installation's utility suppliers or when the use of the local prevailing rate directly conflicts with a utility supplier's regulation.

14.3.12. Wheeling Charge. The wheeling charge is the total of the line loss, operations, maintenance, and repair costs, other utility costs, capitalized charges, and administrative overhead. The following wheeling charge provision sample can be used in a utility service contract: *"In consideration for the use of government-owned, on-base distribution systems to transport utilities to (show the name and address of the non-Federal organizations), the utility supplier agrees to include on the monthly invoice to the installation a deduction for the amount of utilities consumed by the non-Federal organizations and a deduction to cover the wheeling charge of (show the amount) per (show the unit of measurement [KWH, MCF, BTU or KGAL]). Annually, the base Energy Manager recalculates the wheeling charge according to AFI 321061, using prior fiscal year cost data, and gives the utility supplier the updated wheeling charge, which takes effect on 1 January. The government may revoke this provision with a 30-day written notice to the utility supplier."*

Chapter 15

MEASURING UTILITY COMMODITY CONSUMPTION

15.1. Meters and Energy Data Systems. AF uses data from meters to build future utility requirements and define energy conservation opportunities. Energy Managers use AF energy data systems to enable energy costs savings by:

- 15.1.1. Verification of utility bills/rate comparison
- 15.1.2. Measurement and verification of energy conservation efforts
- 15.1.3. Benchmarking building energy use
- 15.1.4. Increasing user awareness and financial accountability
- 15.1.5. Identifying operational efficiency improvement opportunities
- 15.1.6. Focus on maintenance, repair, and equipment replacement
- 15.1.7. Facility re/retro-commissioning
- 15.1.8. Optimizing equipment life and improving reliability
- 15.1.9. Assessing impact of utility price fluctuations

15.2. Meters on Existing Facilities. Meters are mandatory at existing facilities IAW Federal Energy Management Program (FEMP) *Guidance for Electric Meters on Federal Buildings*.

15.3. Advanced Meters. Advanced meters are installed on all utility system renovations exceeding installation commander approval authority, new MILCON, major renovations, Energy Conservation Investment Program (ECIP) projects, and Energy Savings Performance Contract (ESPC) projects. The *AF Meter Data Management Plan MDMP* establishes milestones for installing advanced meters and Advanced Meter Reading System (AMRS) as a cyber-secure tool to manage utility consumption data, change behavior, and achieve greater energy efficiencies at Air Force installations. AMRS requires the Civil Engineer Virtual Local Area Network (CE VLAN) 1.0 or Industrial Control System Network (ICS Net) to capture data. The AF MDMP identifies CE VLAN 1.0 installation for local systems and the ICS Net as a centralized system at higher energy consuming installations. Installation of meters at AF installations will comply with OSD, FEMP, AF, UFC policy and EOs.

15.4. Water Meters. Water meters are located at all installation potable water entry/service points, on base well water facilities, and also on appropriate facilities serviced by the base water distribution system. For both potable and non-potable water, advanced meters should be installed on all water-intensive facilities. At a minimum, these facilities include: district heat and chiller plants, dormitories, galleys/kitchens, dining facilities, swimming pools, gyms, golf courses, piers, dry docks, vehicle wash stations, industrial facilities, hospitals, water-intensive laboratories, and landscaping systems. The installation of water meters for locations with significant outdoor water use is encouraged. In addition, sufficient meters should be installed or other leak detection devices on distribution systems, if required, to effectively identify system losses. Zonal meters are an option for use as systems age, leaks increase, or cathodic protection systems fail. Information on measuring steam at central steam plants is found in AFI 32-1068, *Heating Systems and Unfired Pressure Vessels*.

15.5. Electric and Gas Meters. For electric and gas meters, installations conduct and document, with AFCEC verification, the capability of existing meters installed on facilities, and upgrade meters or communication where appropriate.

15.5.1. Installations ensure facilities meet DoDI and AF criteria and conduct meter feasibility evaluations to determine if advanced meters are required.

15.5.2. AFCEC ensures AMR project installations comply with ETL 09-11, *Civil Engineering Industrial Control System (ICS) Information Assurance (IA) Compliance*; and that all AMR ICSs comply with interim IA security requirements within ETL 09-11 or be turned off immediately. Refer to AF Network Integration Center (AFNIC) for information on the standard wireless Platform IT (PIT) approved form CE AMR.

15.6. Meter Calibration. Utility purchase contracts have provisions specifying meter calibration and refunds due the government when meters are not calibrated correctly. The base Energy Manager keeps a copy of the latest meter calibration test for each meter in the utility service folder. Calibration for meters owned by the utility provider is the responsibility of the utility provider.

Chapter 16

UTILITY CONSUMPTION

16.1. Utility Consumption Estimates. When meters have not been installed, estimating utility consumption includes:

- 16.1.1. Inspecting motor nameplates.
- 16.1.2. Determining what periods and loads the motors operate.
- 16.1.3. Determining the amount and duration of electricity used for heating, air conditioning, lighting, and other loads.

16.2. Heating and Air Conditioning Estimates. Estimates for heating and air conditioning may be made by using the methods specified in the *American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Handbook*.

16.3. Water Consumption and Wastewater Flow Estimates. If possible, temporary meters can be used to estimate water consumption and wastewater flow; otherwise, the following best estimate possible may be used, which are based on the guidelines in the Federal Water Use Indices (see *The Air Force Water Conservation Guidebook*) available from AFCEC:

- 16.3.1. 75 gallons per day per person residing in a mobile home.
- 16.3.2. 150 gallons per day per person for facilities occupied on a 24-hour-per-day basis.
- 16.3.3. 50 gallons per day per person for administrative or industrial facilities occupied on an 8-hour-shift-per-day basis, plus any water needed for industrial or irrigation purposes.
- 16.3.4. Estimate domestic sewage consumption by using 70 to 90 percent of the water consumption, depending on the amount of water needed for industrial or irrigation purposes.
- 16.3.5. Estimate industrial wastewater flow for small users according to operational records, facility visits, and the observed flow during normal workload periods; accounting for holiday, seasonal, and other unusual impacts when estimating average flows for small users.
- 16.3.6. Estimate industrial wastewater flow for depot maintenance activity by subtracting the estimated flow for all non-depot maintenance contributors from the total flow measured at the industrial wastewater treatment plant. (Depot maintenance activities normally account for 80 percent to 98 percent of the flow.)
 - 16.3.6.1. Estimate average flows for all non-depot maintenance contributors, including activities required to reimburse and those not required to reimburse.
 - 16.3.6.2. Calculate the depot maintenance flow by subtracting the non-depot maintenance flows from the total flow measured at the industrial wastewater treatment plant.
 - 16.3.6.3. When enough data on total flows and depot maintenance's flows is available, calculate the average percentage of total flow attributed to depot maintenance. Use this total with monthly or quarterly total industrial wastewater treatment plant flows to determine the depot maintenance's flows for billing purposes.

Chapter 17

AIR FORCE ENERGY REPORTING SYSTEM (AFERS)

17.1. AFERS Data. AFERS is the information data system that accounts for the cost and consumption of purchased utilities used by DoD activities and is used for the annual energy reporting to Congress. Therefore, AFERS data must be accurate and timely. Data is input into AFERS no later than 60 days after the end of month of consumption (or end of the established billing cycle).

17.1.1. AFERS data is used to track energy goal progress, analyze AF consumption trends, and develop long-term policy that ensures adequate and deliverable energy resources are available in support of the AF mission.

17.1.2. AFERS includes site-level utility consumption data for AF owned and leased facilities. This includes remote bases or sites assigned to or supported by the reporting (host) AF base.

17.1.3. Host bases and Federal reimbursable customers may mutually agree to report utility consumption through their own command channels. However, data is coordinated between hosts and tenants to ensure that consumption, cost, and square footage data is reported under one agency to avoid duplicate reporting.

17.1.4. Utility information for non-DoD reimbursable customers is not included in AFERS. Cost and consumption data for these customers is subtracted prior to input to AFERS.

JOHN B. COOPER, Lt General, USAF
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Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

Title 31 USC §1501, *Appropriation Accounting (Documentary Evidence Requirement for Government Obligations)*

EISA 2007 (Pub. L. 110-140, originally named the Clean Energy Act of 2007)

DoDI 4000.19, *Interservice and Intragovernmental Support*, 25 April 2013

DoDI 4170.11, *Installation Energy Management*, 11 December 2009

DoD 7000.14-R, *DoD Financial Management Regulation, Volume 3, Budget Execution - Availability and Use of Budgetary Resources*)

FAR Part 17.5, *Interagency Acquisitions Under the Economy Act*

FAR Part 41, *Acquisition of Utility Services*

DFARS Part 241, *Acquisition of Utility Services*

AFI 32-1032, *Planning and Programming Appropriated Fund Maintenance, Repair, and Construction Projects*, 17 October 2014

AFI 32-1068, *Heating Systems and Unfired Pressure Vessels*, 18 September 2014

AFI 32-1061, *Providing Utilities to U.S. Air Force Installations*, 27 January 2016

AFI 32-1067, *Water and Fuel Systems*, 4 February 2015

AFI 32-6001, *Family Housing Management*, 21 August 2006

AFI 32-9005, *Real Property Accountability and Reporting*, 4 March 2015

AFMAN 33-363, *Management of Records*, 1 March 2008

Abbreviations and Acronyms

AF—Air Force

AAFES—Army and Air Force Exchange Service

AFCEC AF—Air Force Air Force Civil Engineer Center

AFCEC/CNR—Air Force Civil Engineer Center, Energy Directorate

AFERS—Air Force Energy Reporting System

AFI—Air Force Instruction

AFLOA/JACE-ULFSC—Air Force Legal Service Agency, Environmental Law and Litigation Division, Utility Law Field Support Center

AFMAN—Air Force Manual

AFPAM —Air Force Pamphlet

ASHRAE—American Society of Heating, Refrigerating & Air Conditioning Engineers

BCE—Base Civil Engineer
BTU—British Thermal Unit
DFARS—Defense Federal Acquisition Regulation Supplement
DLA—Defense Logistics Agency
DOE—Department of Energy
DoD—Department of Defense
DoDI—Department of Defense Instruction
DSNGP—Direct Supply Natural Gas Program
EISA—Energy Independence and Security Act
ESPC—Energy Savings Performance Contract
FAR—Federal Acquisition Regulation
GSA—General Services Administration
HP—Housing Privatization
HQ USAF—Headquarters United States Air Force
HQ USAF/A4C—Headquarters US Air Force, Directorate of Civil Engineers
IAW HQ USAF—Headquarters United States Air Force In Accordance With
ICS—Industrial Control System
KGAL—Thousands of Gallons
KW—Kilowatts
KWH—Kilowatt-Hours
Lbs—Pounds
LDC—Local Distribution Company
MBTU—Million British Thermal Units
MAJCOM—Major Command
MCF—Millions of Cubic Feet
MFH—Military Family Housing
MHPI—Military Housing Privatization Initiative
MWR—Morale, Welfare, and Recreation
NAF—Nonappropriated Fund
O&M—Operations and Maintenance
RPI—Real Property Inventory
thm—therm (i.e., 100,000 BTUs)

UP—Utilities Privatization

USC—United States Code

UESC—Utility Energy Services Contract

Terms

Capital Investment, Capital Cost—Capital costs can include costs for land, taxes, surveying, construction, inspection, materials, and labor. The total capital costs are the original costs to the government to construct/install the plant, distribution system, or collection system; any additional upgrade, alteration or addition costs; and repair by replacement costs. The net repair by replacement costs are reduced by the original construction costs of the portion replaced.

Connection Charge—A fee paid by a utility customer to cover the costs of connecting household or commercial service to utility service lines.

Distribution System—Refers to the combination of the physical hardware required to deliver the commodity to end-use customers and the procedures and processes used to perform the actual delivery.

Facility Energy Security—Air Force installation energy security is an assured, sustainable, resilient, and sufficient energy supply. The defining characteristics are surety, sustainability, sufficiency, and supply. Surety is reliable, available, and secure energy delivery. Sustainability is a survivable, safe, operable, and maintainable infrastructure. Sufficiency provides the right level of energy surety for the mission. Supply is an efficient, affordable, and diverse source of energy.

Housing Privatization—Conversion of Government housing to privatized housing through the authorities in 10 USC §2871 and §2885, as amended.

Master Metering—A method of metering the use of a utility in which multiple buildings or customers are all metered cumulatively on the same meter. For example, a condominium on master metering would receive one energy bill for all condo owners measured through that meter.

Operations and Maintenance—(Department of Defense) Maintenance and repair of real property, operation of utilities, and provision of other services such as refuse collection and disposal, entomology, snow removal, and ice alleviation.

Reimbursable—Transaction by which the Air Force receives funds from tenants or on-base organizations for a service.

Sole Benefit Test—The test used to determine whether the Air Force will charge a PO/customer for any operations, maintenance or repair costs associated with system infrastructure owned by the Air Force. Under the Sole Benefit Test, if system infrastructure owned by the Air Force is solely benefiting a PO/customer, the Air Force will charge the PO/customer for the operations, maintenance and repair costs for that portion of the system infrastructure.

Utilities Privatization—Conveyance of Government-owned utility (electric, gas, water, or wastewater) systems to private ownership through the authorities in Title 10 USC §2688, as amended. (Sale of installation utilities infrastructure to a public or private utility company who then owns, operates and maintains the utility system.)

Utilities Privatization System Owner—An entity that has been awarded a UP service contract to operate, maintain, and recapitalize the utility system. In addition, the Government assets are transferred to the Utilities Privatization System Owner by Bill of Sale.

Wheeling—When a utility or energy distribution company delivers, or wheels, energy from the transmission system to an end-use customer, it is referred to as retail wheeling. When a customer who also generates energy produces energy at one site, transports it across someone else's facilities and consumes it at another site, it is referred to as self-service wheeling.

Attachment 2

COST ACCOUNTING CODES

The accounting codes below are the primary recommended codes for utility distribution systems.

Table A2.1. Cost Accounting Codes.

O&M IWIMS Code	Description	R&M	Real Property Cat Code	Category of Real Property
			811XXX	PRODUCTION AND GENERATION
53010	Elect Production	56010	811144	Total Energy Plant Building and nomenclature (Total ENG Plt Bldg). (The unit of measure for area amount is - SF). (The cost account is 51070).
53010	Elect Production	56010	811145	Prime/Standby Electric Power Generation Plant (UNIT OF MEASURE - KW) (Nomenclature - ELEC PWR GEN PLT).
53010	Elect Production	56010	811147	Emergency Electric Power Generation Plant (UNIT OF MEASURE - KW) (Nomenclature - ELEC E/PWR GEN PLT).
53010	Elect Production	56010	811149	Electric Power Station Building (UNIT OF MEASURE - SF) (Nomenclature - ELEC PWR STN BLDG).
			812XXX	DISTRIBUTION AND TRANSMISSION LINES.
53015	Elect Dist Lines	56015	812223	Primary Distribution Line Overhead (OTHER UNIT OF MEASURE - LF) (Nomenclature - PRIM DISTR LNE OH).
53015	Elect Dist Lines	56015	812224	Secondary Distribution Line Overhead (OTHER UNIT OF MEASURE - LF) (Nomenclature - SEC DISTR LINE OH).
53015	Elect Dist Lines	56015	812225	Primary Distribution Line Underground (OTHER UNIT OF MEASURE - LF) (Nomenclature - PRIM DISTR LNE UG).
53015	Elect Dist Lines	56015	812226	Secondary Distribution Line Underground (OTHER UNIT OF MEASURE - LF) (Nomenclature - SEC DISTR LINE UG).
51070	NOT Elect Dist Lines; Reimbursable ONLY if stated in Lease, Support Agreement, or similar agreement	56015	812921	Electrification Aircraft Outlets (OTHER UNIT OF MEASURE - EA) (Nomenclature - ELEC ACFT OUTLETS).
52080	NOT Elect Dist Lines; Reimbursable ONLY if stated in Lease, Support Agreement, or similar agreement	56015	812926	Exterior Area Lighting (OTHER UNIT OF MEASURE - EA) (Nomenclature - EXTERIOR AREA LTG).
52080	NOT Elect Dist Lines; Reimbursable ONLY if stated in Lease, Support Agreement, or similar agreement	56015	812928	Traffic Lights (OTHER UNIT OF MEASURE - EA) (Nomenclature - TRAFFIC LIGHTS).
			813XXX	SUBSTATIONS AND SWITCHING STATIONS.
53015	Elect Dist Lines	56015	813228	Electric Switching Station (UNIT OF MEASURE - SF; OTHER UNIT OF MEASURE - EA) (Nomenclature - ELEC SWITCH STN).
53015	Elect Dist Lines	56015	813231	Electric Substation (OTHER UNIT OF MEASURE - KV) (Nomenclature - ELEC SUBSTATION).
			821XXX	HEAT STEAM - SOURCE.
53020	Heat Production	56020	821111	Coal Yard (UNIT OF MEASURE - SY) (Nomenclature - COAL YARD).
53020	Heat Production	56020	821112	Heating Fuel Oil Storage (UNIT OF MEASURE - GA)

O&M IWIMS Code	Description	R&M	Real Property Cat Code	Category of Real Property
				(Nomenclature - HGT FL OIL STOR).
53020	Heat Production	56020	821113	Heating from Central Plant (UNIT OF MEASURE - SF) (Nomenclature - HTG FR CEN PLT).
53020	Heat Production	56020	821115	Heating Plant 750/3500 MB (UNIT OF MEASURE - MB) (Nomenclature - HTG PLT 750/3500 MB).
53020	Heat Production	56020	821116	Heating Plant 3500 MB and Over (UNIT OF MEASURE - MB) (Nomenclature - HGT PLT OV 3500 MB).
51070	Heat Production	56020	821117	Heating Facility Building (UNIT OF MEASURE - SF) (Nomenclature - HTG FCLTY BLDG).
53020	Heat Production	56020	821155	Steam Plant Industrial (OTHER UNIT OF MEASURE - MB) (Nomenclature - STEAM PLT IND).
53020	Heat Production	56020	821156	Steam Facility Building (UNIT OF MEASURE - SF) (Nomenclature - STEAM FCLTY BLDG).
			822XXX	HEAT STEAM - TRANSMISSION.
53030	Steam Dist Lines	56030	822245	Hot Water Mains (UNIT OF MEASURE - LF) (Nomenclature - HOT WTR MAINS).
53030	Steam Generation	56030	822248	Hot Water Pump Station (UNIT OF MEASURE - SF) (Nomenclature - HOT WTR PMP STN).
53030	Steam Generation	56030	822265	Steam Heating Main (UNIT OF MEASURE - LF) (Nomenclature - STEAM HTG MAINS).
53030	Steam Generation	56030	822268	Condensate Return Pump Station (UNIT OF MEASURE - SF) (Nomenclature - CONDEN PMP STN).
			823XXX	HEAT GAS - SOURCE.
53035	Gas Dist Sys	56035	823243	Gas Compressor (UNIT OF MEASURE - SF) (Nomenclature - GAS COMPRESSOR).
53035	Gas Dist Sys	56035	823244	Gas Storage (UNIT OF MEASURE - SF) (Nomenclature - GAS STOR).
53035	Gas Dist Sys	56035	823248	Gas Vaporizer (UNIT OF MEASURE - SF) (Nomenclature - GAS VAPORIZOR).
			824XXX	HEAT GAS - TRANSMISSION.
53035	Gas Dist Sys	56035	824462	Gas Meter Facility (UNIT OF MEASURE - SF) (Nomenclature - GAS METER FCLTY).
53035	Gas Dist Sys	56035	824464	Gas Mains (OTHER UNIT OF MEASURE - LF) (Nomenclature - GAS MAINS).
53035	Gas Dist Sys	56035	824466	Gas Odorizer Facility (UNIT OF MEASURE - SF) (Nomenclature - GAS ODORIZER FCLTY).
53035	Gas Dist Sys	56035	824468	Gas Valve Facility (UNIT OF MEASURE - SF) (Nomenclature - GAS VALVE FCLTY).
			831XXX	TREATMENT AND DISPOSAL.
53050	Ind WW Sys Sys	56050	831155	Industrial Waste Treatment and Disposal (UNIT OF MEASURE - KG) (Nomenclature - IND WST TRMTandDSPL).
53050	Ind WW Sys Dist	56050	831157	Industrial Fuel Spill Collection (UNIT OF MEASURE - KG) (Nomenclature - IND WST FL-SP COLL).
53040	Sew & Waste Sys Dist	56040	831165	Sewage Treatment and Disposal (UNIT OF MEASURE - KG) (Nomenclature - SEWAGE TRMT and DSPL).
53040	Sew & Waste Plant	56040	831168	Waste Treatment Facility Building (UNIT OF MEASURE - SF) (Nomenclature - WST TRMT BLDG).
53040	Sew & Waste Plant	56040	831169	Sewage Septic Tank (UNIT OF MEASURE - KG) (Nomenclature - SEWAGE SEPTIC TANK).
			832XXX	COLLECTION.
53050	Sew & Waste Sys Dist	56050	832255	Main Industrial Waste (OTHER UNIT OF MEASURE - LF) (Nomenclature - IND WST MAIN).
53040	Sew & Waste Sys Dist	56040	832266	Main Sanitary Sewage (OTHER UNIT OF MEASURE - LF) (Nomenclature - SAN SEWAGE MAIN).
53040	Sew & Waste Sys Dist	56040	832267	Pump Station Sanitary Sewage (UNIT OF MEASURE - SF) (Nomenclature - SAN SEWAGE PMP STN).

O&M IWIMS Code	Description	R&M	Real Property Cat Code	Category of Real Property
			841XXX	WATER SUPPLY TREATMENT AND STORAGE.
53060	Water Supply Dist	56060	841161	Water Supply Main (OTHER UNIT OF MEASURE - LF) (Nomenclature - WTR SUP MAINS).
53060	Water Supply Dist	56060	841162	Commercial Water Supply (OTHER UNIT OF MEASURE - KG) (Nomenclature - WTR COML SUP).
53060	Water Production	56060	841165	Water Supply Treatment (OTHER UNIT OF MEASURE - KG) (Nomenclature - WTR SUP TRMT).
53060	Water Production	56060	841166	Water Well (OTHER UNIT OF MEASURE - KG) (Nomenclature - WTR WELL).
53060	Water Production	56060	841169	Water Supply Building (UNIT OF MEASURE - SF) (Nomenclature - BLDG WTR SUP).
53060	Water Production	56060	841423	Water Storage Dam (OTHER UNIT OF MEASURE - FA) (Nomenclature - WTR STOR DAM).
53060	Water Production	56060	841425	Water Storage Reservoir (OTHER UNIT OF MEASURE - KG) (Nomenclature - WTR STOR RESERVOIR).
53060	Water Supply Dist	56060	841427	Water Tank Storage (OTHER UNIT OF MEASURE - KG) (Nomenclature - WTR TANK STOR).
			842XXX	DISTRIBUTION SYSTEM POTABLE.
53060	Water Supply Dist	56060	842245	Water Distribution Mains (OTHER UNIT OF MEASURE - LF) (Nomenclature - WTR DISTR MAINS).
53060	Water Supply Dist	56060	842249	Water Pumping Station (UNIT OF MEASURE - SF) (Nomenclature - WTR PMP STN).
	Not Currently Reimbursable		843XXX	FIRE PROTECTION NON-POTABLE.
	Not Currently Reimbursable		843314	Fire Protection Water Storage (UNIT OF MEASURE - KG) (Nomenclature - FR PROTEC WTR STOR).
	Not Currently Reimbursable		843315	Fire Hydrants (OTHER UNIT OF MEASURE - FA) (Nomenclature - FR HYDR).
	Not Currently Reimbursable		843316	Fire Protection Water Mains (OTHER UNIT OF MEASURE - LF) (Nomenclature - FR PROTEC WTR MAIN).
	Not Currently Reimbursable		843319	Water Fire Pumping Station (UNIT OF MEASURE - SF; OTHER UNIT OF MEASURE - GM) (Nomenclature - WTR FR PMP STN).
			844XXX	SUPPLY STORAGE NON-POTABLE.
53060	Non-Potable Dist Sys	56060	844367	Water Supply Storage (Non-Potable) (UNIT OF MEASURE - KG) (Nomenclature - WTR SUP STOR N/POT).
53060	Non-Potable Dist Sys	56060	844368	Water Supply (Non-Potable) (UNIT OF MEASURE - KG) (Nomenclature - WTR SUP N/ POT).
			845XXX	DISTRIBUTION SYSTEM NON-POTABLE.
53060	Non-Potable Dist Sys	56060	845362	Water Supply (Non-Potable) (UNIT OF MEASURE - SF) (Nomenclature - WTR SUP N/ POT BLDG).
53060	Non-Potable Dist Sys	56060	845363	Water Supply Mains (Non-Potable) (OTHER UNIT OF MEASURE - LF) (Nomenclature - WTR SUP MAIN N/POT).
			826XXX	REFRIGERATION (AIR CONDITIONING) - SOURCE.
53070	Central A/C Plants & Sys	56070	826122	Air Conditioning Plants 25 to 100 Tons (OTHER UNIT OF MEASURE - TN) (Nomenclature - A/C PLT 25-100 TN).
53070	Central A/C Plants & Sys	56070	826123	Air Conditioning Plant Over 100 Tons (OTHER UNIT OF MEASURE - TN) (Nomenclature - A/C PLT OV 100 TN).
			827XXX	CHILLED WATER - (AIR CONDITIONING) - EXTERIOR.
53070	Central A/C Plants & Sys	56070	827111	Chilled Water Exterior Distribution Lines (OTHER UNIT OF MEASURE - LF) (Nomenclature - CWTR EX/DISTR LINE).
			890XXX	MISCELLANEOUS UTILITIES.
53070	Central A/C Plants & Sys	56070	890111	Storage and Plant Refrigeration Equipment (OTHER UNIT OF MEASURE - HP) (Nomenclature - STORandPLT REG EQUIP).

O&M IWIMS Code	Description	R&M	Real Property Cat Code	Category of Real Property
53070	Central A/C Plants & Sys	56070	890121	Air Conditioning Plant 5 to 25 Tons (OTHER UNIT OF MEASURE - TN) (Nomenclature - A/C PLT 5 TO 25 TN).
53070	Central A/C Plants & Sys	56070	890123	Air Conditioning Plant Building (UNIT OF MEASURE - SF) (Nomenclature - AIR COND PLT BLDG).
53070	Central A/C Plants & Sys	56070	890124	Air Conditioning from Central Plant.
	Not Currently Reimbursable		890125	Air Conditioning Plant Less than 5 Tons.
	Not Currently Reimbursable		890126	Air Conditioning Window Units.
53010	Elect Production	56010	890127	Solar Energy Collector System (OTHER UNIT OF MEASURE - EA) (Nomenclature - SOL N-R-G COLL SYS).

Attachment 3

CONTENTS OF UTILITY SERVICE FOLDER

A3.1. Installations keep a utility service folder for each supplier providing utilities to the installation. An organized folder for each purchased utility is necessary for quick access to utility information. If there are multiple providers of similar utilities, a separate folder for each provider ensures the tracking and reporting of a utility type is reported as a single utility. A 4-part folder works best for maintaining quick access. The folder has 6 sections that correspond to each area listed below. Excess and older documents are digitized (scanned, faxed, or converted to PDF) where possible and stored and organized for similar easy access. When data is electronic, provide information in the folder on the location or how to access electronic files. Each utility service folder contains:

A3.1.1. General Data

A3.1.1.1. Customer account number(s).

A3.1.1.2. A map showing the point(s) of delivery and master meter(s) to the installation.

A3.1.2. Billing Data

A3.1.2.1. Billings for the last 24 months.

A3.1.2.2. Method of computing penalties, late fees, benefits, deductions, tariffs, fuel cost adjustments, standby charges, and other additional under the current rate schedule.

A3.1.2.3. A calculated analysis of the latest proposed rates and charges to the installation, including the date, amount, and percent requested for supplier revenue. Include narrative description of impact of new rates on the installation.

A3.1.3. Contract and Utility Provider Data

A3.1.3.1. Memorandum documenting most recent annual utility contract review and a record of the action(s) taken to resolve problems or issues resulting from the annual review. Include recommendations for resolving these issues.

A3.1.3.2. A copy of each the utility contract, including all contract modifications.

A3.1.3.3. A copy of the current bylaws, if the utility supplier is a cooperative.

A3.1.3.4. The utility supplier's curtailment plan.

A3.1.3.5. The utility supplier's financial and operating annual report for each of the past five years, if available.

A3.1.3.6. A copy of all applicable published rate schedules the utility supplier offers.

A3.1.4. Utility Customer Data

A3.1.4.1. A list of large industrial or commercial customers, in the same rate class as the installation buying utilities from the supplier.

A3.1.4.2. List of all Federal agencies buying utilities from the supplier.

A3.1.5. Service Delivery and Meter Data

A3.1.5.1. Copy of the latest meter calibration for each meter used for billing purposes.

A3.1.5.2. Copy of meter data for the last 24 months

A3.1.5.3. An annual summary chart or graph showing monthly consumption and other billing data (power factor, load factor, minimum charges). Keep a chart or graph for the past 5 years.

A3.1.5.4. Date, duration, impact on the mission, and amount of financial loss (if any) for utility outage (of any duration) for each of the past three years.

A3.1.5.5. Drops in voltage, quantity, and pressure during peak loads.

A3.1.5.6. Pressure, quantity, and voltage actually delivered.

A3.1.5.7. Pressure, quantity, and voltage guaranteed by the contract.

A3.1.6. Correspondence and News Articles

A3.1.6.1. Copies of letters, e-mails, and other correspondence.

A3.1.6.2. Articles on proposed rate changes.

A3.1.6.3. Articles on utility provider initiatives such as renewable energy, energy conservation, and new technology.

Attachment 4

POTABLE WATER SERVICE SPECIFICATIONS FORMAT

Use as Section C in utility service contracts. Use a separate specification sheet (A-1, A-2, A-3) for each point of delivery.

Section C - Description/Specifications/Work Statement

POTABLE WATER SERVICE SPECIFICATIONS _____, dated _____.

(a) SPECIFIC PREMISES TO BE SERVED: _____.

(b) ESTIMATED SERVICE:

Estimated daily maximum demand: _____ KGAL. (K = 1,000)

Estimated annual consumption: _____ KGAL. (The government is neither obligated to use, nor is it restricted to, the above estimate.)

(c) POINT OF DELIVERY. The point of delivery of water is _____ (see attached map or one-line diagram).

(d) DESCRIPTION OF WATER SERVICE. The contractor shall have _____ gallons per minute of water continuously available at the point of delivery at a pressure of not less than _____ pounds per square inch gauge.

(e) QUALITY OF WATER. The contractor shall supply clear, potable water safe for human consumption IAW current Federal, state, and local standards.

(f) METERING. Water shall be measured by _____ meter(s).

(g) SIZE OF CONTRACTOR'S PIPELINE TO POINT OF DELIVERY: _____ inches diameter.

(h) ALTERATIONS AND ADDITIONS.

(Show the rate schedule that applies to this specification sheet.)

Attachment 5

SEWAGE SERVICE SPECIFICATIONS FORMAT

Use as Section C in utility service contracts. Use a separate specification sheet (A-1, A-2, A-3) for each point of delivery.

Section C - Description/Specifications/Work Statement

SEWAGE SERVICE SPECIFICATIONS _____, dated _____.

(a) SPECIFIC PREMISES TO BE SERVED: _____.

(b) ESTIMATED SERVICE:

Estimated annual volume: _____ KGAL. (K = 1,000) (The government is neither obligated to use, nor is it restricted to, the above estimate.)

(c) POINT OF DELIVERY. The government shall deliver the sewage to the contractor at

_____ (see attached map or one-line diagram).

(d) SERVICE TO BE RENDERED. The contractor shall furnish a sanitary sewer connection and sanitary sewage service that shall receive, carry, treat, and dispose of all sanitary sewage originating at the government site. The contractor shall operate the sewage disposal and treatment facilities in conformity with applicable laws, rules, and regulations promulgated by Federal, state, and local authorities.

(e) METERING. (Use the applicable provision.)

The quantity of sewage received by the contractor will be taken as ____ percent of the metered quantity of water used by the government. (70 percent to 90 percent, depending on amount of water used for industrial or irrigation purposes).

The sewage received by the contractor shall be measured by _____
_____ flow meter(s).

(f) SIZE OF SEWER TO POINT OF DELIVERY: _____ inches diameter.

(g) ALTERATIONS AND ADDITIONS.

(Show the rate schedule that applies to this specification sheet.)

Attachment 6

STEAM SERVICE SPECIFICATIONS FORMAT

Use as Section C in utility service contracts. Use a separate specification sheet (A-1, A-2, A-3) for each point of delivery.

Section C - Description/Specifications/Work Statement

STEAM SERVICE SPECIFICATIONS _____, dated _____.

(a) SPECIFIC PREMISES TO BE SERVED: _____.

(b) ESTIMATED SERVICE:

Estimated hourly maximum demand: _____ pounds. (\pm 1.340 Btu per pound)

Estimated annual consumption: _____ pounds. (The government is neither obligated to use, nor is it restricted to, the above estimate.)

(c) POINT OF DELIVERY. The point of delivery of steam is _____ (see attached map or one-line diagram).

(d) DESCRIPTION OF STEAM SERVICE. The contractor shall have _____ pounds per hour of steam continuously available at the point of delivery at a pressure of not less than _____ nor more than _____ pounds per square inch gauge.

(e) QUALITY OF STEAM. The steam furnished shall contain no more than 1 percent moisture and shall be free of condensate at point of delivery.

(f) CONDENSATE RETURN (make specification according to supplier's requirements).

(g) METERING. (Show number and type of meters installed [condensate or flow]).

Steam shall be measured by _____
_____ meter(s).

(h) SIZE OF PIPELINE TO POINT OF DELIVERY: _____ inches diameter.

(i) ALTERATIONS AND ADDITIONS.
(Show the rate schedule that applies to this specification sheet.)

Attachment 7

ELECTRIC SERVICE SPECIFICATIONS FORMAT

Use as Section C in utility service contracts. Use a separate specification sheet (A-1, A-2, A-3) for each point of delivery.

Section C - Description/Specifications/Work Statement

ELECTRIC SERVICE SPECIFICATIONS _____, dated _____.

(a) SPECIFIC PREMISES TO BE SERVED: _____.

(b) ESTIMATED SERVICE:

Estimated maximum demand: _____ kW.

Estimated annual consumption: _____ kW h. (The government is neither obligated to use, nor is it restricted to, the above estimate).

(c) POINT OF DELIVERY. The point of delivery is _____ (see attached map or one-line diagram).

(d) DESCRIPTION OF ELECTRIC SERVICE. Contractor shall supply ___ phase, ___ wire, ___ hertz, alternating current at ___ volts. The voltage of contractor's high-tension line is _____. The substation is owned by _____. The power factor correction capacitors on the substation are owned by _____.

Substation transformers: normal capacity _____ KVA; overload capacity is _____ KVA for _____ hours; transformer connection (Delta or Wye): high side _____, low side _____. Lightning arresters: type _____; rating _____. Switching apparatus: high side, _____, interrupting capacity _____ KVA; low side, _____, interrupting capacity _____ KVA.

(e) METERING. The contractor shall provide access to digital readout signal, when available, at no additional cost. The contractor shall provide daily and monthly integrated load profiles and other meter reading data if the government so requests. Service will be measured at _____ volts by _____ watt hour meter(s) and _____ demand meter(s) and _____ reactive-kilovoltampere meter(s).

(f) ALTERATIONS AND ADDITIONS.

(Show the rate schedule that applies to this specification sheet.)

(**NOTE:** OCB = oil circuit breaker; VAB = vacuum air breaker; ACB = air circuit breaker; DISC = disconnect switch.)

Attachment 8

NATURAL GAS SERVICE SPECIFICATIONS FORMAT

Use as Section C in utility service contracts. Use a separate specification sheet (A-1, A-2, A-3) for each point of delivery.

Section C - Description/Specifications/Work Statement

NATURAL GAS SPECIFICATIONS _____, dated _____.

(a) SPECIFIC PREMISES TO BE SERVED: _____.

(b) ESTIMATED SERVICE: Firm service is _____ percent of the estimated total annual consumption and interruptible service is the remaining _____ percent.

Estimated maximum demand: _____ MBtu per hour.

Estimated maximum daily quantity: _____ MBtu per day.

Estimated annual consumption: _____ MBtu. (The government is neither obligated to use, nor is it restricted to, the above estimate.) Estimates, by month, of the gas consumption for a typical year are shown in attachment A of Section J.

(c) POINT OF DELIVERY. The point of delivery of gas shall be _____ (see attached map or one-line diagram).

(d) PRESSURE AT THE POINT OF DELIVERY: The contractor shall maintain independent regulated pressure at the point of delivery within ± 10 percent of _____ pounds per square inch gauge (psig).

(e) METERING AND BILLING. Gas shall be measured at the point of delivery by _____ meter(s). (Show number and type of meter installed.)

(f) QUALITY OF NATURAL GAS. The contractor shall provide to the government natural gas service in a manner and Form that is consistent with all applicable Federal, state and local laws, rules, permits, regulations, codes (including the National Fuel Gas Code), and natural gas industry and pipeline companies' standards. The gross heating value of natural gas delivered shall be no lower than _____ British thermal unit (Btu) per cubic foot (ft³). Btu is the amount of heat needed to raise the temperature of 1 pound of water by 1 degree Fahrenheit (1° F) at standard atmospheric pressure. One cubic foot of gas = 1 cubic foot of natural gas at a temperature of 60° F, and a pressure of 14.73 pounds per square inch absolute (psia), and as delivered water vapor content. Gross heating value = the number of Btus produced by the combustion at constant pressure of 1 cubic foot of natural gas at a temperature of 60° F, a pressure of 14.73 psia, and as delivered water vapor content with air at the same temperature and pressure as the gas, when the products of combustion are cooled to the initial temperature of the

gas and air, and when the water formed as product of combustion is condensed to the liquid state. The units are Btu/ft3.

ALTERATIONS AND ADDITIONS:

(Show the rate schedule that applies to the specification sheet for FIRM service.)

(Show the rate schedule that applies to the specification sheet for INTERRUPTIBLE service.)

(NOTE: Express the unit of measurement in Btu, MBtu, Dth, Mcf. M = one thousand. 1 decatherm (Dth) = 1 MBtu = 1,000,000 Btu.

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In coordination with the MAJCOMs and installations, ensure project support teams are established that include professionals from contracting, real property, cost / financial management analysis, environmental, engineering, legal, and other specialties required for UP privatization analysis and defining the statement of requirements (sections J of the RFP) for each associated installation and utility distribution system.