

ATTACHMENT J2

Arnold AFB Natural Gas Distribution System

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J2 Arnold AFB Natural Gas Distribution System

J2.1 Arnold AFB Overview

Arnold Air Force Base (AFB) is located in middle Tennessee, 72 miles southeast of Nashville and 61 miles northwest of Chattanooga at exit 117 off Interstate Highway 24. Arnold AFB covers approximately 40,000 acres, straddling Coffee and Franklin counties and situated in the tri-city triangle composed of Tullahoma, Manchester, and Winchester, Tennessee.

The Arnold Engineering Development Center (AEDC) is a 4,000 acre industrial aerospace test facility located within Arnold AFB. It is not a typical military installation. The Center and its mission are unlike that of any other facility in the United States. It is perhaps the largest, most diverse aerospace testing and flight simulation facility in the world. The facility includes its own 4,000-acre lake to supply water to the Center's testing facilities.

Another unique element of the Center is workforce. Unlike most military installations, AEDC is Government managed and Contractor operated and maintained. In Oct 2003, the Government awarded a competitive, 12-year award-term, integrated Operations, Maintenance and Information Management support contract to Aerospace Testing Alliance (ATA), hereafter referred to as the Mission Support Contractor. The scope of this contract ranges from aerospace test planning, test cell, plant and facility maintenance and support functions such as civil engineering, security and fire protection to information management. Utility operation and maintenance and some repair projects are performed by the Mission Support Contractor. Other maintenance and repair efforts are competitively contracted by the Government with project management, access and check-out performed by the Mission Support Contractor. Integration between the test cells, plants, utilities and utility suppliers is highly complex and requires real-time decision making to support dynamic test mission requirements.

AEDC's primary mission is the development and testing of aerospace systems. The test mission is divided between three primary business areas: aerodynamics, aeropropulsion, and space and missiles. Wind tunnels and computational modeling are used to support the aerodynamic test mission. There are two 16-foot wind tunnels, one 4-foot tunnel, and three hypersonic tunnels used to test a full range of articles, including full-scale aircraft, spacecraft and rockets, as well as bombs, fuel tanks and other separation ordnance and externally deployed stores. The aeropropulsion facilities enable AEDC to test engines through their entire operational envelope – takeoff through climb to altitude, and in combat and performance maneuvers. The space and missiles facilities enable AEDC to test articles in specialized conditions, such as at sea level or at altitudes exceeding 300 miles above sea level, as well as through extreme performance – subsonic to well past Mach 20. Overall, the Center is capable of delivering a full spectrum of aerospace test support to its customers, which include military and private sector companies.

AEDC consumes vast quantities of energy and water to support its test missions. Its utility requirements differ dramatically from typical military installations, both in the amount of

the commodity used and the fluctuations in use. The consumption, demand, and fluctuation in use of electricity, water, and natural gas dictate a high degree of integration between the government and its contractors and between the Center and its utility providers. Utilities play a major role in the tactical and strategic execution of AEDC's mission.

While the Center does not have an active flying mission, it does have a single runway along the western edge of the Base that runs northeast to southwest. There are also 687 facilities and 329 buildings on AEDC, totaling approximately 2.8 million square feet. The distribution of facility space is approximately 79 percent industrial, 13 percent administrative, 6 percent laboratories, and 2 percent residential, primarily military family housing (MFH).

Tenant organizations are also located at Arnold AFB. The largest tenant is the Tennessee Army National Guard (TNARNG). The TNARNG conducts training activities, such as a small-arms firing range and tank maneuver area, on approximately 6,700 acres. An integral component of AEDC, although not considered a tenant, is the Naval Air Warfare Center Aircraft Division, which oversees naval testing at AEDC. Other tenants include:

- Air Force Office of Special Investigations
- Army and Air Force Exchange Services
- Detachment 2, Research and Acquisition Communications Division
- Detachment 36, Management Engineering Team, Squadron Manpower and Organization
- Defense Commissary Agency
- Defense Contract Audit Agency
- Defense Investigative Service

J2.2 Natural Gas Distribution System Description

J2.2.1 Natural Gas Distribution System Fixed Equipment Inventory

The Arnold AFB natural gas distribution system consists of all appurtenances physically connected to the distribution system from the point in which the distribution system enters the Installation and Government ownership currently starts to the point of demarcation, defined by Section J2.12.2, General Description of the Utility System, Lateral Extent of the Right-of-Way, and Points of Demarcation. The system may include, but is not limited to, pipelines, valves, regulators, and meters. The actual inventory of items sold will be in the bill of sale at the time the system is transferred. The following description and inventory is included to provide the Utilities Privatization (UP) Contractor with a general understanding of the size and configuration of the distribution system.

Specifically excluded from the natural gas distribution system privatization are:

- Approximately 17 miles of gas transmission lines crossing the base which are owned by Elk River Public Utility District (ERPUD). Approximately 1.3 miles of the aforementioned total run in the ERPUD easement along Wattendorf Memorial Highway.

- Propane tanks and propane supply systems.

J2.2.1.1 Description

The Elk River Public Utility District (ERPUD) supplies natural gas to AEDC at several locations. Natural gas is supplied to the industrial portion of the Center through an ERPUD owned pressure reducing and metering station at 100 pounds per square inch gauge (psig). ERPUD also serves the wastewater treatment plant, paint shop, and commissary through separate service connections that contain pressure regulators and meters. These connections are metered and billed as separate accounts from the AEDC gas utility system.

There is no natural gas distribution in the Arnold Village military family housing area.

Natural gas is used in the testing facilities and for the production of steam at the two steam plants. Gas consumption is metered at each steam plant and test facility. The system piping is coated carbon steel. Most of the system was installed in the 1970s. The last major extension was the 6-inch line to the J6 Test Area in 1993. The gas utility system is radial and none of the buildings can be fed from different paths.

The AEDC gas distribution systems consist of approximately 14,500 linear feet of piping. Pipe sizes range from 0.5 to 12 inches. Other than Steam Plan C, which is served by three separate regulators, there are nine facilities connected to the AEDC natural gas system. Each facility that uses gas has at least one pressure regulator to lower gas pressure for equipment use. There are no district regulator stations. All devices that use natural gas are downstream of meters, although not all users are individually metered. There are 22 meters installed for internal charging purposes. There are also two meters inside of Steam Plant C used to meter the natural gas which can only be read from the Steam Plant C control system. These two meters will not be conveyed with the natural gas system.

Natural gas is supplied to AEDC in an odorized condition and there are no odorization facilities included in the AEDC natural gas distribution system. There are no compressed natural gas (CNG) fueling stations on Arnold AFB.

Depth of burial for the natural gas distribution piping averages between 2 and 3 feet below ground surface. Since the piping is metallic, tracer wire has not been installed. Approximately 10 percent of the gas distribution piping is located below paved surfaces.

An impressed-current type cathodic protection system serves the natural gas distribution piping. This system consists of 3 rectifier units with 34 test points located at strategic locations along the course of the line. Monthly maintenance checks/data collection is performed on the AEDC portion of the cathodic protection system, to determine the functionality/degradation of the systems.

J2.2.1.2 Inventory

Table 1 provides a general listing of the major natural gas distribution system fixed assets for the Arnold AFB natural gas distribution system included in the sale.

TABLE 1
Fixed Inventory
Natural Gas Distribution System, Arnold AFB, TN

Item	Size	Quantity	Unit	Approximate Year of Construction
PE Gas Pipe	2-in.	1,523	LF	1985
Steel Gas Pipe	0.5-in.	10	LF	1970
Steel Gas Pipe	0.75-in.	209	LF	1970
Steel Gas Pipe	1-in.	32	LF	1970
Steel Gas Pipe	2-in.	841	LF	1970
Steel Gas Pipe	3-in.	271	LF	1970
Steel Gas Pipe	4-in.	2,562	LF	1970
Steel Gas Pipe	6-in.	4,874	LF	1993
Steel Gas Pipe	6-in.	1,747	LF	1970
Steel Gas Pipe	8-in.	750	LF	1970
Steel Gas Pipe	10-in.	1,362	LF	1970
Steel Gas Pipe	12-in.	313	LF	1970
PE Plug Valves	2-in.	1	EA	1985
Steel Plug Valves	0.5-in.	2	EA	1970
Steel Plug Valves	0.75-in.	1	EA	1970
Steel Plug Valves	1-in.	2	EA	1970
Steel Plug Valves	2-in.	5	EA	1970
Steel Plug Valves	3-in.	8	EA	1970
Steel Plug Valves	3-in.	2	EA	1993
Steel Plug Valves	4-in.	17	EA	1970
Steel Plug Valves	6-in.	32	EA	1970
Steel Plug Valves	6-in.	1	EA	1993
Steel Plug Valves	8-in.	9	EA	1970
Steel Plug Valves	12-in.	1	EA	1970
Large Regulators	2-in.	2	EA	1995
Large Regulators	3-in.	4	EA	1995
Large Regulators	4-in.	1	EA	1995
Plug valve, est. 2 per regulator	2-in.	4	EA	1995
Plug valve, est. 2 per regulator	3-in.	8	EA	1995
Plug valve, est. 2 per regulator	4-in.	2	EA	1995

Item	Size	Quantity	Unit	Approximate Year of Construction
Small Regulators	0.5-in.	1	EA	1995
Small Regulators	0.75-in.	3	EA	1995
Small Regulators	1-in.	1	EA	1995
Gas cock valve, est. 2 per regulator	0.5-in.	2	EA	1995
Gas cock valve, est. 2 per regulator	0.75-in.	6	EA	1995
Gas cock valve, est. 2 per regulator	1-in.	2	EA	1995
Large Meters	2-in.	21	EA	1995
Gas cock valves, est. 2 per meter	2-in.	42	EA	1995
Main Delivery Meters	4-in.	1	EA	1995
Shutoff valves, est. 2 per meter	4-in.	2	EA	1995
Rectifier Stations		3	EA	1975
Cathodic Protection Test Stations		34	EA	1975

Notes:

PE = Polyethylene

LF = Linear Feet

EA = Each

est. = estimated

in. = Inches

PE = polyethylene

PSI = Pounds per Square Inch

J2.2.2 Natural Gas Distribution System Non-Fixed Equipment and Specialized Tools

Table 2 lists other ancillary equipment (spare parts) and **Table 3** lists specialized vehicles and tools included in the purchase. Offerors shall field verify all equipment, vehicles, and tools prior to submitting a bid. Offerors shall make their own determination of the adequacy of all equipment, vehicles, and tools.

TABLE 2

Spare Parts

Natural Gas Distribution System, Arnold AFB, TN

Qty	Item	Make/Model	Description	Remarks
<i>None Identified</i>				

TABLE 3

Specialized Vehicles and Tools

Natural Gas Distribution System, Arnold AFB, TN

Description	Quantity	Location	Maker
None Identified			

J2.2.3 Natural Gas Distribution System Manuals, Drawings, and Records

Table 4 lists the manuals, drawings, and records that will be transferred with the system.

TABLE 4
Manuals, Drawings, and Records
Natural Gas Distribution System, Arnold AFB, TN

Qty	Item	Description	Remarks
Various		See Bidders' Library for Manuals, Drawings and Records to be included with the system to be privatized	

J2.3 Specific Service Requirements

The service requirements for the Arnold AFB natural gas distribution system are as defined in the Section C, *Description/Specifications/Work Statement*. The following requirements are specific to the Arnold AFB natural gas distribution system and are in addition to those found in Section C. If there is a conflict between requirements described below and Section C, the requirements listed below take precedence over those found in Section C.

J2.3.1 AEDC Utility Operations

The AEDC mission is an on-going 24 hour a day operation. The UP Contractor shall provide all required support to the Mission Support Contractor and the Government that is necessary to coordinate his utility operations. The UP Contractor shall maintain a staff of management and personnel capable of reacting to interruptions, changes required by mission, disruptions, or other changes from routine operations, on-site, within the industrial complex, 24 hours a day, seven days a week, 365 days a year.

Natural gas is used to support test and support mission requirements 24 hours per day, 7 days a week 52 weeks a year. Natural gas directly supports heaters and the Steam Plants. Steam Plant C can only operate on natural gas. Steam Plant A is the main user of natural gas. Steam is used to support testing, heating/freeze protection and humidification. Fuel oil can be used at Steam Plant A as an emergency backup, but is more costly. The operation and maintenance history for the natural gas system is provided in the Bidders' Library.

The UP Contractor shall operate the utility system efficiently and effectively, minimizing interruptions in service, see Section J2.3.6, Service Interruptions. Service shall be to the interfaces defined by the points of demarcation specified in Section J2.12.2, General

Description of the Utility System, Lateral Extent of the Right-of-Way, and Points of Demarcation, see Tables 11 and 12. The UP Contractor shall monitor the system for leaks and other disruptions of service. When these occur, the UP Contractor will be contacted and requested to join in an investigation of the cause. The UP Contractor shall participate fully in this investigation to include management and engineering resources. If the cause of this occurrence is determined to be the responsibility of the UP Contractor, reimbursement to the Government for any damages caused to equipment or lost service shall be in accordance with Section J2.3.6, Service Interruptions. The UP Contractor is not responsible for lost service assessment when caused by adverse weather or by actions of the Government or Mission Support Contractor which fail or damage UP Contractor operated and maintained equipment.

Response times for the purpose of this Contract fall into two categories, emergency and routine, see Section C.8, Routine and Emergency Repair Response. Emergencies are defined as loss of utility service that has a direct impact on on-going mission testing, safety, health and the welfare of AEDC personnel. All other responses are defined as routine. The UP Contractor shall respond immediately upon notice by the AEDC Operation Center of an emergency. The UP Contractor shall work the problem until resolution without delay or postponement. Prior to any break in response before resolution and return to service, the UP Contractor shall notify the AEDC Operation Center that a representative of the Government is needed to discuss the response plan and schedule. Upon approval by the Contracting Officer, the UP Contractor shall implement the approved resolution plan.

In accordance with Section C.5, Utility System Ownership, Employees, and Security, the UP Contractor shall submit requests for personnel security clearance to the Contracting Officer. All personnel working within the AEDC industrial complex shall have appropriate clearances. It is not anticipated that a secret clearance will be required.

J2.3.2 Performance Measurement

The Government will measure the UP Contractor's performance using several methodologies. First, each of the more than 1,500 employees at AEDC measures the utilities delivered to them. For example, when the lights do not come on, water pressure drops or waste backs up, they are required to call the AEDC Operations Center and report the problem. A work request is generated and a determination of emergency or routine response is made. If the problem is utilities in nature, the UP Contractor will be called and requested to respond. In many instances, both the Mission Support Contractor and the UP Contractor will have to respond and determine who is responsible for fixing the problem (Section J2.12.2, General Description of the Utility System, Lateral Extent of the Right-of-Way, and Points of Demarcation). The UP Contractor shall take immediate action to resolve problems on his side of the interface and return service as soon as possible (see Section J2.3.6, Service Interruptions). When the problem impacts AEDC's test mission or support activities, the AEDC Operations Center will track the time from report of outage to the time utility service is restored. If the lost service is determined to have been caused by the UP Contractor or UP Contractor's equipment, the cost of lost service will be assessed in accordance with Section J2.3.7, Cost of Lost Service.

Another method for measuring performance is meter data. There are many meters located at AEDC. These meters provide a good basis for establishing and measuring system

performance, specifically system losses. The UP Contractor shall use historic data and initial meter readings to establish a baseline for system efficiency. The UP Contractor shall report system efficiency monthly in accordance with Section J2.6, Submittals.

The Government, in coordination with the Mission Support Contractor, will also monitor the UP Contractor's performance in coordinating work, complying with standards, policies and practices and in general, and the requirements of this work statement. The UP Contractor is expected to adequately maintain, properly design and protect his equipment to enable uninterrupted reliable service. Unscheduled interruptions due to the UP Contractor's equipment or operations are expected to be rare. All unscheduled interruptions will be investigated, and where found to be attributed to the UP Contractor, the cost for lost test time will be assessed in accordance with Section J2.3.6, Cost of Lost Service.

J2.3.3 System Transition

Transitioning the AEDC utility systems will not be an easy task. Most of the technical data and information available has not been maintained through configuration management over the 50 years of operation. The existing utility workforce is well trained and knowledgeable of the configuration of the systems and the effort required to operate and maintain the utility system without interrupting AEDC's test mission.

In accordance with Section C.13, Transition Plan, the UP Contractor shall plan for an efficient and effective transition of operation, maintenance and investment for the utility system. The UP Contractor's Transition Plan shall address:

- a. Specific Transition Requirements, which may include service connections and disconnections, as well as other requirements necessary to support utilities privatization. See Section J2.10, Specific Transition Requirements.
- b. Facilities (identify any requirements for facilities, both short term temporary and long term, to support management, engineering, and/or operations and maintenance personnel, and/or materials and equipment)
- c. Labor (union or non-union, types, categories, certifications)
- d. Training required (identify required training relative to the utility system infrastructure being transferred, infrastructure not being transferred but integrally related to the system being transferred, AEDC procedures, AEDC test operations, or other training requirements needed for system transition)
- e. Method for managing technical information which must fall under change control processes discussed in Section J2.3.3, System Configuration and Control, and which will be used by the UP Contractor, the Government and the Mission Support Contractor
- f. Current personnel working for the Mission Support Contractor and proposed to be hired by the UP Contractor
- g. Access, security clearances, requirements for internet access,
- h. Coordination (planning for access to AEDC's local area network, participating in planning and scheduling meetings, forms, practices or procedures the UP Contractor

will want AEDC to adopt or adapt to, points of contact, understanding of AEDC response time and lost service assessment requirements)

- i. Reducing technical risk (understanding of the work permit process, switching, AEDC Standards, policies and procedures, understanding of equipment to be operated and maintained)
- j. Schedule for Investment Work (AEDC's test mission cannot be disrupted; therefore, access to utility system equipment is limited. This has historically resulted in significant additional costs to perform utility maintenance and equipment replacement due to having to work around test schedules.)
- k. Final Checkout, Test and Transfer Activities (the UP Contractor shall define specific performance criteria for transition to demonstrate to the Government that the UP Contractor can successfully operate and maintain the utility system)

J2.3.4 System Configuration and Coordination

The Government requires configuration control across systems at AEDC, which dictates configuration control by the UP Contractor and the Mission Support Contractor for a commonly used, operated and maintained utility system. At AEDC, changes on one side of the system interface may cause disruptions or adverse impacts on the other side of the system interface. Occasionally, natural gas service is curtailed by the provider, which requires AEDC to use alternative fuels to provide energy for steam production. For this reason, all routine configuration changes to the system shall be fully coordinated in advance with the Mission Support Contractor.

J2.3.4.1 Configuration Control

All routine configuration changes to the system shall be fully coordinated in advance with the Mission Support Contractor. The UP Contractor shall coordinate any configuration changes with AEDC that may impact Government-owned facilities, test cells or plant utilities. The UP Contractor shall coordinate and support all configuration changes identified by AEDC as required to maintain test facility schedules and objectives. The UP Contractor shall receive approval to switch, backfeed, and perform other similar operations from the Tactical Integration Chairman (a Mission Support Contractor employee).

At the end of each month, the UP Contractor shall report a summary of all configuration, switching and other changes made during the month. The summary shall be included in the UP Contractor's Monthly Operations and Maintenance Report (see Section J2.6). All switching and other changes shall be professionally logged. The UP Contractor shall make the logs available to the Government for review when requested.

The UP Contractor shall keep and maintain complete, current and accurate operation and maintenance manuals, diagrams, schematics, procedures, switching policies, confined space entry procedures, and lock out and tag out procedures. The UP Contractor shall submit copies of this information as part of his Annual Operation, Maintenance, Repair, Improvement and Modernization Plan. The UP Contractor shall also make this information available to the Contracting Officer upon reasonable request and notification.

J2.3.4.2 Coordination – Tactical Integration Group Meetings

The UP Contractor shall coordinate with the Mission Support Contractor and the Government to develop a daily, weekly and monthly schedule of meetings for the purpose of reviewing work permit status, discussing emergency operations, scheduling and planning maintenance outages, and other activities requiring coordination. The Mission Support Contractor will have the final authority for the time and location of these meetings. The Mission Support Contractor will prepare minutes and track action items of these meetings. For meetings called by the UP Contractor, the UP Contractor will prepare meeting minutes and maintain an action item log. Meeting minutes shall be submitted within 3 working days to the Contracting Officer.

UP Contractor shall participate in daily Tactical Integration Group (TIG) meetings as directed by the Contracting Officer. The UP Contractor shall be available 24 hours a day to coordinate changes in schedule and requirements to support testing, weather or other concerns. The UP Contractor shall participate in coordination meetings to answer questions about system condition and ability to meet AEDC mission requirements. The Contracting Officer will provide the UP Contractor with a list of weekly scheduling meetings. Currently, the Mission Support Contractor convenes a 0715 daily meeting to coordinate utility test support. The weekly AEDC Outage meetings convene on Wednesday mornings at 0830 hours. The weekly TIG convenes formal meetings on Thursdays at 0830. The UP Contractor shall also attend other ad hoc meetings convened by the TIG Chairman (a Mission Support Contractor employee) as required. Ad hoc meetings are held whenever there is an incident, lost test time, or service interruption. Ad hoc meetings are estimated to occur approximately 3 times per week.

J2.3.4.3 Leak Detection Surveys

Leak detection surveys shall be performed in accordance with the Tennessee Regulatory Authority Chapter 1220-4-5 and 49 CFR 192. AEDC is classified as a business district for the purposes of 49 CFR 192.

J2.3.4.4 Cathodic Protection Systems

The UP Contractor shall own, maintain, and operate the cathodic protection systems for the natural gas system. The UP Contractor shall submit copies of all cathodic protection system test readings to the Government as a part of his Annual Operation, Maintenance, Repair, Improvement and Modernization Plan.

J2.3.4.5 Selection of Pipe Materials

Because a large portion of AEDC property is an industrial site, it is likely that buried piping may be exposed to significant concentrations of pollutants. The UP Contractor shall consider potential pollutants and select pipe materials accordingly and in accordance with AWWA C900, Section 4.1.

J2.3.5 Master Work Permits

The Government requires extreme measure be taken when clearing personnel for access to areas within test facilities, when entering confined spaces, interrupting service to work on utilities and infrastructure, and when digging or penetrating the grounds at AEDC. There

have been numerous occurrences where personnel have been put into jeopardy, equipment has been damaged and AEDC's test mission impacted due to improper coordinated activities. The AEDC Master Work Permit process is very specific. All requests for work clearance, service interruption (outage) and digging require the UP Contractor to submit an AEDC Master Work Permit and gain approval for the permit prior to work.

In accordance with Section C.9.5, Excavation Permits, and Section C.9.6, Underground Utility Location and Points of Demarcation, the UP Contractor shall submit a Master Work Permit 10 working days prior to performing routine work. Work shall not be performed without a Government approved Master Work Permit. Requests for emergency work shall be coordinated with the AEDC Operations Center.

In response to Master Work Permits requested by others, the UP Contractor shall review and approve, or provide comments regarding disapproval, within 10 working days of requests for routine work. Requests in support of emergency actions shall be worked commensurate with the need for the work.

The UP Contractor shall adhere to AEDC prescribed methods for marking utilities in the field. The UP Contractor shall be responsible for all repairs, costs, and damages due to digging performed by others for which the UP Contractor did not properly mark his utilities on the approved response to the Master Work Permit. Both Government and UP Contractor approved Master Work Permits shall expire and become invalid 30 days after approval unless otherwise specified on the approved form.

J2.3.6 Service Interruptions

In accordance with Section C.7, Service Interruption/Contingency Plan, the UP Contractor shall notify the AEDC Operations Center of all interruptions to service or incidents where personnel are injured, damage to facilities and equipment are noted, or hazardous materials are spilled or released into the environment. The notification shall be made as soon as possible and no later than 10 minutes after first notice of the incident or interruption. The UP Contractor shall notify the National Response Center, and any other required agencies, of spills that meet reportable quantity thresholds.

J2.3.7 Cost of Lost Service

The UP Contractor shall reimburse the Government for costs associated with loss of mission or unproductive lost test or activity time resulting from unscheduled interruptions or outages determined to have been caused by the UP Contractor. **Table 5** identifies the lost service assessment for each test mission area. Service assessments are reviewed and new rates established for each fiscal year. Attachment J-51 details the AEDC processes for determining responsibility for lost or unproductive test time as a result of outages or equipment failure. Upon notification of a lost service assessment by the Contracting Officer, the UP Contractor shall annotate the credit in the next invoice. If the lost service assessment is greater than the monthly service charge, the monthly service shall be zero (0) and the invoice annotated to show the outstanding lost service assessment credit to be carried forward to the new monthly invoice.

TABLE 5
Lost Service Assessment

Natural Gas Distribution System, Arnold AFB, TN

Test Mission Area	Lost Service Assessment (\$ per hour)
ETF/ASTF	\$7,935
PWT	\$8,856
VKF	\$4,589

J2.3.8 Communications and Reporting System

AEDC has an integrated communications and reporting system. The UP Contractor shall submit request for and obtain access to the AEDC Local Area Network for access to unclassified information and to electronic mail. The request shall be submitted to the Administrative Contracting Officer. The UP Contractor shall acquire a local telephone number(s) and provide the Administrative Contracting Officer with the telephone number(s) for key personnel and emergency points of contact.

UP Contractor shall conform to the following AEDC requirements and obtain written approval from the AEDC Communications Chief, Network Control Center prior to altering or changing his system communication, meter reading, or reporting of system usage and performance. These requirements and coordination with the Communications Chief, Network Control Center include prior approval for all forms of wireless communication the UP Contractor proposes for use in maintaining, reporting, and operating his system.

- All personnel with access to AF computer systems, and/or networks or personnel that have access to AF data shall be US Citizens, and have a favorable National Agency Check (NAC).
- In addition, personnel that access AF computer systems, or networks shall complete the AF Network User Licensing course annually.
- Accounts are requested via GC-591.
- Submit communications/computer requirements Via AEDC Form 869.
- Communication/computer systems must comply with current AF/AEDC architecture and communications directives.
- All computer/communications systems must have an approved Certification & Accreditation package PRIOR to operation in accordance with AFI 33-202.

J2.3.9 Facility Metering Requirements

In accordance with Sections C.3.3, Sub-Metering, and J2.5.2, Required New Secondary Meters, the UP Contractor shall install new secondary meters as close as possible to the interface point. The interface point is defined by the most applicable point of demarcation as listed in Section J2.12.2, General Description of the Utility System, Lateral Extent of the Right-of-Way, and Points of Demarcation. Meters shall be revenue quality with calibrations performed annually by the owner with copies provided to the Government. All calibrations

must be traceable to NIST (National Institute of Standards and Technology). New secondary meters shall be capable of communicating via modbus, ION, or DNP3 protocols. The Government and its Mission Support Contractor shall be allowed access to all sub-metering.

In accordance with Section J2.6, Submittals, the UP Contractor shall keep meter books with consumption and demand (if applicable) for each meter. Meter books shall also include building address or facility number, meter number, previous readings, current readings, multipliers for each meter, total consumption, points of contact for meter questions, and procedure for converting meter readings into consumption (including multipliers). Meter Books shall be submitted monthly in accordance with Section J2.6 in electronic format as Microsoft Excel files. The Government will provide an example format in a Microsoft Excel file to be used for meter reading reports.

J2.3.10 Joint-Use Requirements

In accordance with Section C.5.1.4, Air Force Property, there are requirements for joint-use of infrastructure to be conveyed with the utility system being sold. The UP Contractor shall allow the Government, and non-government entities identified by the Contracting Officer, to install or attach property and equipment to poles, conduits, pipes, duct banks, towers, buildings, and other portions of the utility systems to be transferred. Attachment fees shall not apply for Government or non-government entities identified by the Contracting Officer; however, costs of any make-ready work related to safety requirements may be recovered under the contract. All attachments will be coordinated with the UP Contractor prior to incorporating attachments.

J2.3.10.1 Manhole Access

The UP Contractor shall adhere to AEDC policy on maintaining locked communication manholes.

J2.3.10.2 Costs of Services

The UP Contractor is responsible for all utilities, janitorial services, building maintenance, and grounds maintenance for its facilities on Base without cost to the Government. Reimbursement shall be in accordance with Base guidelines for reimbursable services in effect at the time of contract award, and as may change over the life of the contract. The Government shall provide supporting utilities, e.g., electricity to operate pumps and motors at wastewater treatment plant lift stations, as necessary to operate utility system infrastructure being conveyed under this contract.

J2.3.11 Safety, Health, and Environmental Standards

The UP Contractor shall comply with the latest edition of AEDC Safety, Security, Health, Engineering, Configuration Management, Maintenance and Systems Engineering Standards. Copies of these standards are available to the UP Contractor electronically on the AEDC Intranet Homepage.

The UP Contractor shall adhere to AEDC lockout and tagout procedures.

The UP Contractor is responsible for all sampling, monitoring, and reporting requirements to regulatory authorities. Any permit excursions, any Notices of Violation, or any

deficiencies noted by regulatory agencies or discovered during Air Force inspections must be addressed immediately. The UP Contractor shall submit copies of all correspondence with, or submittals to, regulatory agencies to the Contracting Officer within 5 days of submittal to the regulatory agency.

In accordance with Section C.10.2, Spill Contingencies, the UP Contractor shall adopt the AEDC Spill Contingency Plan.

In accordance with Section C.10.3, Hazardous Material and Waste Minimization, the UP Contractor shall adopt the AEDC Hazardous Material and Waste Minimization Plan.

In accordance with Section C.10.3, Hazardous Material and Waste Minimization, the UP Contractor shall submit copies of MSDSs to the AEDC Hazardous Materials Pharmacy 15 days in advance of bringing any hazardous materials onto the installation.

None of the facilities to be conveyed have existing storage areas sufficient to handle bulk storage of hazardous materials. None of the facilities to be conveyed are permitted for storage of hazardous waste. In accordance with Section C.10.3, Hazardous Material and Waste Minimization, and Section H.8, Hazardous Substances, construction, operation, and permitting of any such storage areas will be the responsibility of the UP Contractor. The UP Contractor shall not dispose construction debris, demolition materials or wastes, other hazardous materials or wastes, asbestos, or any other material or waste in Arnold AFB landfills.

In accordance with Section C.2.1, Qualified Utility Providers and H.11, Historic Preservation, the UP Contractor shall not perform alterations to any building or structure deemed to be eligible or potentially eligible for placement on the National Register of Historic Places until approved by said officer.

J2.3.12 Fire Control and Safety

The UP Contractor shall enter into a Memorandum of Understanding with AEDC Fire Department for fire protection of all facilities included in the purchase of the utility, and any facilities installed in the future. The UP Contractor will agree to adhere to all fire protection requirements of AEDC. The UP Contractor shall maintain fire alarm system and equipment in facilities on-base and owned by the UP Contractor. The UP Contractor further agrees to permit Fire Department personnel access to their facilities for the sole purpose of performing fire inspections and emergency response.

J2.3.13 Crisis Situations

In accordance with Section C.9.8, *Exercises and Crisis Situations Requiring Utility Support*, the UP Contractor shall provide support as directed by the AEDC Commander or equivalent agency control center for exercises and crisis situations.

J2.4 Current Service Arrangement

The Elk River Public Utility District (ERPUD) supplies natural gas to AEDC. The current contract provides for the following estimated maximum volumes: 0.5 million cubic feet (MMCF) per hour, 5.0 MMCF per day, 925 MMCF per year.

The annual natural gas consumption for 2001, 2002, and 2003 was 642, 595, and 548 MMCF, respectively. The monthly consumption during this period ranged from a minimum of 27.8 MMCF in July 2003 to a maximum of 79.3 MMCF in February 2002.

The Center operates at a 100-percent load factor on its firm contract gas quantity. The first 1.0 MMCF are purchased from ERPUD under a firm contract. Additional volumes are purchased on an interruptible basis and may be restricted by ERPUD. The demand for gas depends upon the needs of the test facilities. Therefore, annual volumes as well as daily demands are subject to great variations.

The Government retains responsibility for the purchase of the utility commodity and the associated delivery schedule of the commodity. The UP Contractor shall be required to obtain written approval prior to contacting any Base commodity providers. The Government shall notify the UP Contractor of changes in commodity providers or delivery schedules that will impact the UP Contractor's system in accordance with the requirements of this contract.

J2.5 Secondary Metering

J2.5.1 Existing Secondary Meters

Table 6 provides a listing of the existing (at the time of contract award) secondary meters that will be transferred to the UP Contractor. The UP Contractor shall provide meter readings for all secondary meters in accordance with Section C.3.3 and J2.6 below.

TABLE 6
Existing Secondary Meters
Natural Gas Distribution System, Arnold AFB, TN

Meter Location	Meter Description
ASTF	NG-FM1-Z
Steam Plant B/535	NG-FM2-Z
VKF/665	NG-FM4-Z
VKF/665	NG-FM5-Z
Vaporizer Bldg/782	NG-FM6-Z
J3/890	NG-FM7-Z
Steam Plant A/1411	NG-FM8-Z
ETF/884	NG-FM9-Z
ETF/884	NG-FM10-Z
ETF/884	NG-FM11-Z
ETF/884	NG-FM12-Z
ETF/884	NG-FM13-Z
Main gate station	NG-FM14-Z

Meter Location	Meter Description
ETF R-Cells /Bldg.878	
Process Air Heater/Bldg. 898	
T-3 Combustor/Bldg. 898	
A-Plant South Heater/Bldg. 880	
VKF/HB1A Htr.	
VKF/HB1B Htr.	
VKF/W15/W17 Htr.	
VKF/W16/W18 Htr.	
VKF/HB1 Htr.	

J2.5.2 Required New Secondary Meters

The UP Contractor shall install and calibrate new secondary meters as listed in **Table 7**. New secondary meters shall conform to NIST standards and be installed in accordance with Section C.13, Transition Plan. After installation, the UP Contractor shall maintain and read these meters in accordance with Sections C.3.3 and J2.6 below.

TABLE 7
New Secondary Meters
Natural Gas Distribution System, Arnold AFB, TN

Meter Location	Meter Description
<i>None Identified</i>	

J2.6 Monthly Submittals

The UP Contractor shall provide the Government monthly submittals for the following:

1. Invoice (in accordance with G.2). The UP Contractor's monthly invoice shall be presented in a format proposed by the UP Contractor and accepted by the Contracting Officer. Invoices shall be submitted by the 5th of each month for the previous month. Invoices shall be submitted to:

Name: AEDC / MAT

Address: MS 9015, Building 1099, 1099 Avenue C, Arnold AFB, TN, 37389

Phone number: (931) 454-6712

2. Operations and Maintenance (O&M) Report. The UP Contractor's monthly O&M report will be prepared in the format proposed by the UP Contractor and accepted by the Contracting Officer. O&M reports shall include the following information for utility work:

Scheduled outages: Requestor, date, time, duration, facilities affected, feedback provided during outage, outage notification form number, and digging clearance number.

Unscheduled outages: Include date, time and duration, facilities affected, response time after notification, completion times, feedback provided at time of outage, specific item failure, probability of future failure, long term fix, and emergency digging clearance number.

Maintenance, maintenance and repair, investment and modernization accomplishments: Identify work performed to maintain safe, environmentally compliant, reliable and available operations. Compare and contrast actual work accomplished with annual M&R Plan. Provide a list of all configuration changes and supporting documentation (identify assets changed, documentation numbers or identifiers, scope of change, revision after change, reason for change, date documentation updated). Provide planning to reduce or eliminate system losses.

O&M reports shall be submitted by the 25th of each month for the previous month. Outage reports shall be submitted to:

Name: AEDC / MAT

Address: MS 9015, Building 1099, 1099 Avenue C, Arnold AFB, TN, 37389

Phone number: (931) 454-6712

3. Meter Reading Report. The monthly meter reading report shall show the current and previous month readings for all identified secondary meters. The UP Contractor's monthly meter reading report will be prepared in the format proposed by the UP Contractor and accepted by the Contracting Officer. Meter reading reports shall be submitted by the 5th of each month for the previous month. Meter reading reports shall be submitted to:

Name: AEDC / MAT

Address: MS 9015, Building 1099, 1099 Avenue C, Arnold AFB, TN, 37389

Phone number: (931) 454-6712

4. System Efficiency Report. In accordance with Section C.3, the UP Contractor shall submit a monthly system efficiency report in a format proposed by the UP Contractor and accepted by the Contracting Officer. The UP Contractor shall establish a baseline documenting the efficiency of commodity delivery through the distribution system. The basis for efficiency reporting shall incorporate an approach that accounts for commodity received from the commodity providers, commodity delivered to end users and system losses and unaccounted for uses. The UP Contractor's report shall demonstrate performance relative to the baseline, to include efforts planned and implemented to reduce system losses and unaccounted for uses. System efficiency reports shall be submitted by the 25th of each month for the previous month. System efficiency reports shall be submitted to:

Name: AEDC / MAT

Address: MS 9015, Building 1099, 1099 Avenue C, Arnold AFB, TN, 37389

Phone number: (931) 454-6712

5. Annual Operation, Maintenance, Repair, Improvement and Modernization Plan. The UP Contractor shall submit its first Plan 30 Days after Contract Award and shall update the Plan annually thereafter. The Plan shall identify any planned outages or interruptions to service, configuration changes or facility modifications, and system upgrades. The Plan shall also identify system improvements to reduce losses. The Plan shall clearly delineate points of contact, their responsibilities and any interfacing operational policies and procedures.

Name: AEDC / MAT

Address: MS 9015, Building 1099, 1099 Avenue C, Arnold AFB, TN, 37389

Phone number: (931) 454-6712

J2.7 Energy Saving Projects

In accordance with Section C.3, Requirement, the following projects have been implemented by the Government for conservation purposes.

- None identified.

J2.8 Service Area

In accordance with Section C.4, Service Area, the service area is defined as all areas within the Arnold AFB boundaries.

J2.9 Off-Installation Sites

No off-installation sites are included in the sale of the Arnold AFB natural gas distribution system.

J2.10 Specific Transition Requirements

In accordance with Section C.13, Transition Plan, **Table 8** provides a listing of transition requirements to be completed by the UP Contractor upon transfer. Transition requirements may include service connections and disconnections, as well as other requirements necessary to support utilities privatization.

TABLE 8
Service Connections and Disconnections
Natural Gas Distribution System, Arnold AFB, TN

Location	Description
Natural Gas Distribution System	The cathodic protection for the natural gas distribution system may be protecting other utility systems and cathodic protection on other utility systems may be protecting the natural gas system. The UP Contractor shall evaluate and determine the best approach to isolate and cathodically protect the natural gas distribution system. The UP Contractor shall coordinate any changes to the natural gas distribution system and cathodic protection systems with AEDC prior to making any changes. The UP Contractor shall effect all changes

necessary to isolate and cathodically protect the natural gas distribution system within two years of contract award.

J2.11 Government Recognized System Deficiencies

Table 9 provides a listing of system improvements that the Government has planned. The Government recognizes these improvement projects as representing current deficiencies associated with the Arnold AFB natural gas distribution system. If the utility system is sold, the Government will not accomplish these planned improvements. The UP Contractor shall make a determination as to its actual need to accomplish and the timing of any and all such planned improvements. Capital upgrade projects shall be proposed through the Capital Upgrades and Renewal and Replacement Plan process and will be recovered through Schedule L-3. Renewal and Replacement projects will be recovered through Sub-CLIN AB.

TABLE 9
System Deficiencies
Natural Gas Distribution System, Arnold AFB, TN

Project Location	Project Description
<i>None Identified</i>	

J2.12 Right of Access to the Utility System

J2.12.1 Map of the Utility System

Maps from the Base Comprehensive Plan or other drawings show the known locations of the utility system and are available at the Base Civil Engineering Office. Portions of the utility system may not be fully shown on the map or maps. Any such failure to show the complete utility system on the map or maps shall not be interpreted as that part of the utility system being outside the Installation. The Installation is co-extensive with the entire linear extent of the utility system sold to Grantee, whether or not precisely shown on the map or maps.

TABLE 10
Drawings
Natural Gas Distribution System, Arnold AFB, TN

Qty	Item	Description	Remarks
	Various	See Bidders' Library for Maps, Drawings and Records to be included with the system to be privatized	

J2.12.2 General Description of the Utility System, Lateral Extent of the Right-of-Way, and Points of Demarcation

J2.12.2.1 Utility System Description

The utility system may be composed of, without limitation, the district regulator stations, distribution mains, valves, valve boxes, service lines, regulators, cathodic protection system components including but not limited to anodes and test stations, service lines, and meters used to deliver natural gas to end users on the Installation.

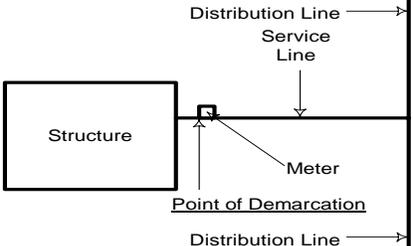
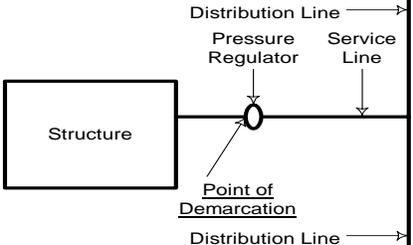
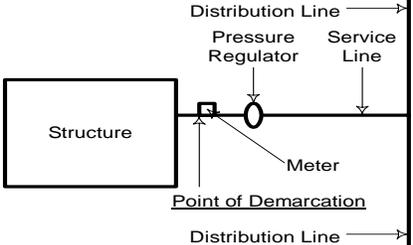
J2.12.2.2 Lateral Extent of Utility System Right-Of-Way:

26-feet-wide, extending 13 feet on each side of the utility system, as installed.

J2.12.2.3 Utility System Points of Demarcation

The point of demarcation is defined as the point on the utility system where ownership changes from the utility system owner to the facility owner. **Table 11** identifies the type and general location of the point of demarcation with respect to the facility for each scenario.

TABLE 11
 General Points of Demarcation
Natural Gas Distribution System, Arnold AFB, TN

Point of Demarcation (POD)	Applicable Scenario	Sketch
POD is the down stream side of the natural gas meter.	Natural gas service to the building is metered.	
POD is the down stream side of the pressure regulator.	Natural gas service to the building is regulated but not metered.	
POD is the down stream side of the closest apparatus to the exterior of the facility.	More than one apparatus is connected to the service line feeding the facility.	

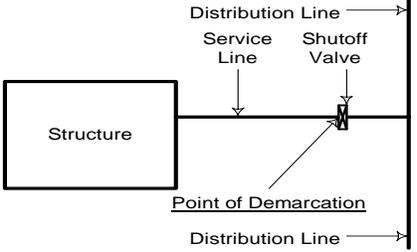
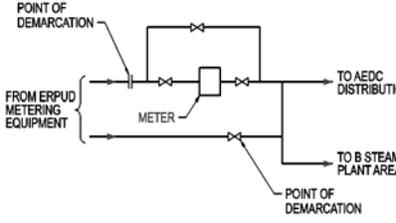
Point of Demarcation (POD)	Applicable Scenario	Sketch
POD is the closest shutoff valve to the exterior of the building.	No meter or regulator exists at the facility.	

Table 12 lists anomalous points of demarcation that do not fit any of the above scenarios. These anomalous or unique points of demarcation shall take precedence over the general points of demarcation shown in Table 11.

TABLE 12

Unique Points of Demarcation

Natural Gas Distribution System, Arnold AFB, TN

Building No.	Point of Demarcation (POD) Description	Sketch
Natural Gas Supply from Elk River Public Utility District (ERPUD)	<ol style="list-style-type: none"> 1) POD is the flanged connection between the ERPUD equipment and the Arnold AFB meter. 2) POD is the valve between the ERPUD equipment and the Arnold AFB branch to the B Steam Plant Area. 	
Various Locations	<p>Scenario: When gas is supplied to a facility and the service includes a meter, a regulator, or both; and there is a bypass line around these devices.</p> <p>Point of Demarcation: POD is the location where the bypass line connects to the main line closest to the facility.</p>	None
Meters	The Government reserves the right to access the UP Contractor's meters. The point of demarcation for communication equipment attached to the UP Contractor's meters is the point where the Government's communication lines attach to the meter.	None

For the areas identified in **Table 13**, Arnold AFB shall not grant any additional easements, rights-of-way, leases, permits, licenses, or other access. Arnold AFB recognizes that these

areas require restricted access and the UP Contractor may take appropriate action to prevent unauthorized access to such areas. This only applies to access by others than the UP Contractor and will not limit any right of access by public authorities charged with the regulation of UP Contractor's activities or law enforcement.

TABLE 13

Restricted Access Areas

Natural Gas Distribution System, Arnold AFB, TN

Description	Facility #	State Coordinates	Other Information
<i>None Identified</i>			

J2.12.3 Environmental Baseline Survey

The Air Force has determined that it is not required to conduct an EBS in regard to the sale of this utility system.