

ATTACHMENT J1

Hill AFB Electric Distribution System

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J1 Hill AFB Electric Distribution System

J1.1 Hill AFB Overview

Located in the Salt Lake Valley west of the Wasatch Mountains and overlooking the Great Salt Lake to the west, Hill Air Force Base (HAFB) is seven miles south of Ogden, Utah and 35 miles north of Salt Lake City. The Main Base occupies approximately 6,689 acres, 6,641 Fee and 48 leased (primarily railroad). Outlying installations include the Little Mountain Test Annex (740 acres), 25 miles northwest of the Base between Ogden City and the Great Salt Lake, and the Utah Test and Training Range (UTTR). The UTTR consists of 954,471 acres and almost 13,000 nautical square miles of airspace approximately 50 air miles west of HAFB.

Acquisition of land began in the 1940s when approximately 3,200 acres, comprising the western side of Hill AFB, was acquired from the Army. Another major acquisition occurred in 1977 when Hill acquired 760 acres from Ogden Arsenal. Approximately 120 other fee tracts, ranging from a fraction of an acre to 320 acres, were acquired from businesses and individuals through the 1940s and 1950s. Approximately 30 additional fee tracts were acquired in the 1960s and 1970s as part of the Air Installation Compatible Use Zones (AICUZ) initiative. By executive order, the vast majority of the UTTR was “withdrawn” from the Bureau of Land Management (North Range in 1940 and South Range in 1941). Little Mountain was acquired (Fee) in 1957.

Hill AFB has 1,916 structures, 1,371 buildings, and over 14 million square feet (msf) of floor space comprised of the following major functional categories: Industrial: 4,542,697 square feet (SF); Administrative: 1,542,797 SF; Military Family Housing (MFH): 1,607,605 SF; Unaccompanied Housing: 261,410 SF; Transient Quarters: 55,168 SF; and Other Community/Support: 696,137 SF; and other facilities: 5,300,000 SF.

Hill AFB expects to add 48 additional facilities totaling 957,115 square feet over the next 10 years, and an additional 9 facilities with approximately 601,483 square feet between 10 - 20 years. Hill will require the Contractor to provide all supporting utilities and will negotiate appropriate fee increases to cover the cost of utility construction.

The Base has a 13,500-foot runway that handles more than 40,000 takeoffs and landings annually. It also has 228 miles of roadway and 28 miles of railroad.

J1.1.1 Installation History

The present day HAFB has its roots in two separate entities: the Ogden Arsenal and Hill Field. Though these installations existed as neighbors for over a decade, and for years were both within the structure of the U.S. Army, they pursued separate missions.

Ogden Arsenal, originally established to store surplus World War I munitions, became an important supply center during World War II. The Installation stored and shipped a full range of ordnance and transportation equipment. The Arsenal also manufactured various munitions during World War II.

Hill Field was constructed in response to a War Department initiative in 1939 to increase arms production and expand military operations. Hill Field, southeast of the Arsenal, served as a supply center, but its focus was air material, repair, and maintenance of aircraft. In November 1940, the Army Air Corps activated on Hill Field the Ogden Air Depot.

After World War II, the dominant role of Hill Field was the storage of over 1,200 aircraft and support equipment. Hill Field became HAFB in 1948 with the establishment of the U.S. Air Force as a separate service. With the onset of the Korean War, HAFB reactivated and returned to flying readiness B-26 and B-29 aircraft. In 1955, the Base nearly doubled in size with the annexation of the adjacent Arsenal and the broad physical parameters that currently describe HAFB were established.

J1.1.2 Mission, Organization, and Associate Units

Hill AFB and its associated Little Mountain Test Annex and the UTTR occupy a vital place in the Air Force and Air Force Material Command (AFMC) inventory of installations. The host organization is the Ogden Air Logistics Center (OO-ALC). The Base also hosts more than 40 tenants, including combat forces (the 388th Fighter Wing and the 419th Fighter Wing (Air Force Reserve)) as well as the Defense Megacenters Ogden and the Defense Logistics Agency (DLA).

The OO-ALC provides worldwide engineering support and logistics management for the F-16 Flying Falcon as well as maintaining F-16 and C-130 aircraft. More than 250 aircraft and 16,800 avionics and structural components are processed annually. Hill AFB is also responsible for worldwide logistics management for the nation's fleet of intercontinental ballistic missiles. The Base overhauls and repairs landing gear, wheels, and brakes; rocket motors; air munitions and guided bombs; photonics equipment; training devices; avionics; instruments; hydraulics; software and other aerospace related components.

The UTTR is used for tests of conventional and smart munitions, missile motors, and long-range standoff weapons. It also supports tactical aircraft, bomber, and helicopter training and large force exercises.

Major units at HAFB include:

- 388th Fighter Wing (Air Combat Command)
- 419th Fighter Wing (Air Force Reserve)
- Defense Megacenters Ogden (Defense Information Systems Agency)
- Defense Depot Hill Utah (Defense Logistics Agency)
- Defense Commissary Agency
- Defense Finance and Accounting Agency
- Defense Contract Audit Agency
- Air Force Judiciary Area Defense Counsel
- Defense Reutilization and Marketing Office
- Army and Air Force Exchange Service
- Air Force Audit Agency

- Air Force Office of Special Investigations, Detachment 113
- Air Education and Training Command
- U.S. Army Corps of Engineers
- Tooele Army Depot Rail Center
- Small Business Administration
- Forest Service (U.S. Department of Agriculture)

J1.1.3 Population

The Base population profile is as shown in the following table:

Category	Population
Active Duty U.S. Military	4,625
Air National Guard/ Air Force Reserve	1,112
Appropriated Fund Civilians (including Reserve technicians)	11,187
Non-appropriated Fund Civilians	363
Private Business (Bank/Credit Union)	30
Contractors	3,718
Active Duty Military Dependents (resident on Base)	3,500
Total	24,535*

*Includes Little Mountain Test Annex and UTTR

J1.1.4 Housing

Hill AFB has 1,141 MFH units located in three areas on the Base. Area A (14 units), located in the western edge of the Base immediately north of the 1200 Area; Area B (11 units), located in the center of the Main Base; and Areas D/E/F/G (1,116 units) located in the southwest corner of the Base.

The units in Areas A and B were built in the 1930s and 40s, Areas D/E (500 units) in the mid 1960s, and Area F (270 units) in the mid 1970s. The 350 units in Area G were built in the mid 1990s to replace the 350 units that were demolished in the old Area C located to the east of the runway. Currently, the 1,116 MFH units in Areas D/E/F/G are being considered for privatization.

J1.1.5 Utah Test and Training Range

UTTR is a very large and isolated aerial gunnery, bombing and test range located approximately 60 miles due west of Hill AFB (west side of the Great Salt Lake). UTTR total land area covers 954,471 acres. The aerial portion of the range is considerably larger and merges with Dugway Proving Ground’s air space, some 50 miles to the south. The central cantonment area for UTTR is referred to as Oasis. It is comprised of several facilities housing range control, safety, civil engineering, explosive ordnance disposal (EOD), vehicle

maintenance, fire department, security, billeting, food service, and multi-purpose recreation activities. The entrance to the UTTR munitions/missile storage area (MSA) is located approximately one mile to the north of Oasis. The MSA has a perimeter of approximately 13 miles and encloses about 5,000 acres. Apart from the Oasis central cantonment area, there are several small isolated sites (Grassy Mountain, Diddle Knoll, and several others) that accommodate radar, communications, telemetry, and photographic activities. These sites are situated either on mountain peaks or on sites adjacent to the targets. Oasis population remains fairly stable through the workweek with many employees choosing to live in Government quarters rather than commute daily to their homes in distant cities. (Normally, the UTTR is on a four-day workweek, four 10-hour shifts.) The population diminishes considerably on weekends with only a handful of security and fire protection personnel remaining on site. Most of the isolated sites remain unmanned except for special range events. Average site population is approximately 30 contract personnel and 120 Government employees (military and civilian). Utility systems are Government-owned and operated by Air Force civilian employees.

J1.1.6 Little Mountain Test Annex

The Little Mountain Test Annex is located approximately 26 miles northwest of Hill AFB, adjacent to the Great Salt Lake. The total site covers 750 acres; the Main Cantonment area covers about 50 acres and is comprised of 16-18 buildings with an aggregate of 140,000 square feet. The site was constructed in the late 1950s, closed for a period of time in the late 1960s, and then subsequently reopened. Facilities are high-tech test facilities with special electrical loads and demanding HVAC parameters. Site population consists of approximately 60-70 contract test personnel plus four civil engineer craftsmen all of whom work an extended shift (10 hours/day) Monday through Thursday. Three firemen remain on site round-the-clock. Utility systems are Government-owned and operated by Air Force civilian employees.

J1.1.7 Geographically Separated Units

Other geographically separated units (GSUs) are summarized below:

Wendover Field

Wendover Field is a radar, telemetry, and microwave communications site located approximately 150 miles west of Hill AFB on the Utah-Nevada border. In years past, the site had an airstrip but it has since been turned over to the City of Wendover, Utah. The Air Force compound covers approximately 160 acres.

Bovine

Bovine is a radar site approximately 30 miles east of Motello, Nevada and 54 miles due north of Wendover Field.

Trout Creek

Trout Creek is a complex very similar to Bovine on the Utah-Nevada border with the same utility arrangements.

Carter Creek

Carter Creek is an Air Force-owned recreational facility located approximately 110 miles from Hill AFB.

Boulder

The Boulder, Wyoming site, also known as Pinedale, is a special test facility located approximately 125 miles northeast of Hill AFB. Utility arrangements are much the same as the Bovine and Trout Creek sites.

J1.2 Electric Distribution System Description

J1.2.1 Electric Distribution System Fixed Equipment Inventory

The Hill AFB electric distribution system consists of all appurtenances physically connected to the distribution system from the point where the distribution system enters the Installation and Government ownership currently starts to the points of demarcation, defined by the Right of Way. The system includes, but is not limited to, transformers, circuits, protective devices, utility poles, duct banks, switches, street lighting fixtures, and other ancillary fixed equipment. 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 prospective new owner with a general understanding of the size and configuration of the distribution system. The Government makes no representation that the inventory is accurate. The Contractor shall base its proposal on site inspections, information in the technical library, other pertinent information, and to a lesser degree the following description and inventory. Under no circumstances shall the Contractor be entitled to any service charge adjustments based on the accuracy of the following description and inventory.

Specifically excluded from the electric distribution system privatization:

- The airfield lighting system;
- Street lighting;
- Parking lot and area/security floodlights mounted on buildings and/or fed from internal building circuitry and controls;
- Sports fields, track, and pedestrian pathway lighting;
- Water tower beacon lights and traffic signals; and
- Supervisory Control and Data Acquisition (SCADA) Monitoring System.

J1.2.1.1 Description

MAIN BASE

Electrical power for the Main Base is supplied by two Utah Power and Light (UP&L)-owned 44-kilovolt (kV) transmission feeders. The preferred supply feeder originates at UP&L's Syracuse Substation and is routed to the Air Force-owned Hill AFB 44 kV switching station where it terminates on the Air Force-owned structure. UP&L's 44 kV metering equipment is located in this substation. The Hill AFB 44 kV switching station is located about a block west

of the South Gate. The alternate supply feeder originates at UP&L's Riverdale Substation, where it is metered and operated in a 'normally open' configuration. It is then routed to the Air Force-owned Hill AFB Substation No. 2, where it terminates on the Air Force-owned structure. Hill AFB Substation No. 2 is located near the North Gate.

The Air Force owns the entire Hill AFB electrical distribution system downstream of these two UP&L delivery points. It consists of one 44 kV switching station, approximately 6.8 miles of overhead 44 kV transmission line supplying four 44-12.47 kV distribution substations, and approximately 100 miles of 12.47 kV primary distribution line.

The 44 kV switching station is the termination and metering point for UP&L's 44 kV supply line. It consists of two 44 kV line terminations (one UP&L-owned line and one Air Force-owned line) and one 44 kV oil circuit breaker. It is a conventional, outdoor, air-insulated transmission switching substation configured in a single bus arrangement. This substation provides control and overcurrent protection for the Air Force-owned 44 kV transmission line supplying the four Hill AFB distribution substations.

Substation No. 5 consists of four 44 kV line terminations, two 12 MVA 44-12.47 kV load-tap changing (LTC) power transformers, one 10 MVA 44-12.47 kV LTC power transformer, one 16/17.92 MVA power transformer, and fifteen 12.47 kV metal-clad circuit breakers. It is a conventional, outdoor air-insulated distribution substation configured in a sectionalized triplex bus arrangement. This substation provides voltage regulation, control, and overcurrent protection for ten 12.47 kV feeders.

Substation No. 4 consists of two 44 kV line terminations, one 12 MVA 44-12.47 kV LTC power transformer, one 10 MVA 44-12.47 kV LTC power transformer, and nine 12.47 kV metal-clad circuit breakers. It is a conventional, outdoor air-insulated distribution substation configured in a sectionalized duplex bus arrangement. This substation provides voltage regulation, control, and overcurrent protection for six 12.47 kV feeders.

Substation No. 3 consists of two 44 kV line terminations, two 7.5 MVA 44-12.47 kV LTC power transformers, and nine 12.47 kV metal-clad circuit. It is a conventional, outdoor air-insulated distribution substation configured in a sectionalized duplex bus arrangement. This substation provides voltage regulation, control, and overcurrent protection for five 12.47 kV feeders.

Substation No. 2 consists of two 44 kV line terminations (one Air Force-owned line and one UP&L-owned line), one 7.5 MVA 44-12.47 kV LTC power transformer, and three 12.47 kV metal-clad circuit breakers. It is a conventional, outdoor air-insulated distribution substation configured in a single bus arrangement. This substation provides voltage regulation, control, and overcurrent protection for three 12.47 kV feeders.

The 44 kV transmission line originates at the 44 kV Switching Station and is then routed to Substations 5, 4, 3, and 2. It is constructed in a single pole, single circuit configuration utilizing both 'Wishbone' and 'Z' type wood crossarm/suspension insulator pole top assemblies and also narrow-profile horizontal post insulator pole top assemblies with 1272 kcmil ACSR conductor. A 12.47 kV distribution circuit also occupies this common route.

The primary distribution system consists of a total of 24 12.47 kV circuits. It is composed of overhead, pole-line construction (conventional, crossarm/pin insulator, open wire

construction practices) with pole-mounted transformer banks, and underground construction (utilizing both duct-type and direct burial construction practices) with both outdoor pad-mounted transformers and indoor primary unit substations. It is estimated that 20 percent of the electrical ductbank lies beneath three-inch asphalt pavements and that 20 percent of the electrical ductbank lies beneath 6-inch concrete pavements.

The overhead primary system is principally composed of bare aluminum conductor steel reinforced (ACSR) conductors of various sizes, with #4, #2, and 4/0 the most common. The underground primary system is principally composed of shielded copper conductors of various sizes, with #1 and 4/0 the most common. The majority of the distribution circuits are configured with loop tie switches to neighboring circuits. The pad-mounted transformers are principally conventional, dead-front units. The Base indicates that all polychlorinated biphenyl (PCB) contaminated transformers were replaced circa 1992.

The Base monitors the loading and status of the electrical equipment at each of the four substations with a SCADA system using direct and phone lines between each substation and the master controller in the Energy Monitoring and Control System (EMCS) Control Room in Building 15. (Building 15 monitors only the SCADA system 24/7.) This also allows the Base to switch breakers in substations, poles, and pad switches throughout the Base. Because the SCADA system cannot be physically separated from the EMS, it will not be included in the privatization action.

LITTLE MOUNTAIN TEST ANNEX

Electrical power for the Little Mountain Test Annex is supplied by a UP&L-owned 44kV transmission feeder which is routed to the Air Force-owned Little Mountain Substation, where it terminates on the Air Force-owned structure. UP&L's metering equipment is located in this substation.

The Air Force owns the entire Little Mountain Test Annex electrical distribution system downstream of this UP&L delivery point. It consists of one 44-4.16 kV distribution substation, one emergency generator, and approximately 1.2 miles of 4.16 kV primary distribution line.

The Little Mountain Substation consists of one 44kV line termination, one five megavolt-ampere (MVA) 44-4.16 kV load tap changer (LTC) power transformer, and five 4.16 kV metal-clad circuit breakers. It is a conventional, outdoor air-insulated distribution substation configured in a single bus arrangement. This substation provides voltage regulation, control, and overcurrent protection for five 4.16 kV feeders.

Emergency power is provided to the distribution system by a manual-start 300 kilovolt-ampere (kVA) 480-volt diesel engine-generator connected to the 4.16 kV distribution system by a manual transfer switch and 4.16 kV step-up transformer. This generator is specifically included in this privatization action.

The primary distribution system is composed of overhead, pole-line construction (conventional, crossarm/pin insulator, open wire construction practices) with pole-mounted transformer banks, and underground construction (utilizing duct-type construction practices) with pad-mounted transformers. It is estimated that 50 percent of the electrical ductbank lies beneath three-inch asphalt pavements.

UTAH TEST AND TRAINING RANGE (UTTR)

Electrical power for the UTTR is supplied by a UP&L-owned 44-kV transmission feeder which is routed to the Air Force-owned UTTR Substation, where it terminates on the Air Force-owned structure. UP&L's metering equipment is located in this substation.

The Air Force owns the entire UTTR electrical distribution system downstream of this UP&L delivery point. It consists of one 44-12.47 kV distribution substation, one emergency generator, and approximately 76.5 miles of 12.47 kV primary distribution line.

The UTTR Substation consists of one 44 kV line termination, one 3.75 MVA 44-12.47 kV LTC power transformer, and six 12.47 kV metal-clad circuit breakers. It is a conventional, outdoor air-insulated distribution substation configured in a single bus arrangement. This substation provides voltage regulation, control, and overcurrent protection for four 12.47 kV feeders and the emergency generator.

Emergency power is provided to the distribution system by an auto-start 1375 kVA 4.16 kV diesel engine-generator connected to the 12.47 kV distribution system by an automatic transfer switch and 12.47 kV step-up transformer. This generator is specifically included in this privatization action.

The primary distribution system is composed of overhead, pole-line construction (conventional, crossarm/pin insulator, open wire construction but incorporating special raptor protection features) with pole-mounted transformer banks, and underground construction (utilizing both duct-type and direct burial construction practices) with pad-mounted transformers. It is estimated that 50 percent of the electrical ductbank and two percent of the direct buried cable lies beneath three-inch asphalt pavements.

WENDOVER FIELD

Electrical power for Wendover Field is supplied from a 12.47 kV primary metered delivery point owned by Wells Rural Electric Cooperative. The Air Force owns the entire electrical distribution system downstream of this 12.47 kV delivery point, consisting of approximately 1.2 miles of 12.47 kV primary distribution line. It is composed of overhead, pole-line construction (conventional, crossarm/pin insulator, open wire construction) with pole-mounted transformer banks.

BOVINE

Electrical power for Bovine is supplied from a 12.47 kV primary metered delivery point owned by the local electric supplier. The Air Force owns the entire electrical distribution system downstream of this 12.47 kV delivery point, consisting of approximately 1.2 miles of 12.47 kV primary distribution line. It is composed of underground construction (utilizing both duct-type and direct burial construction practices) with pad-mounted transformers.

BOULDER (PINEDALE)

Electrical power for Boulder is supplied from a 4.16 kV primary metered delivery point owned by the local electric supplier. The Air Force owns the entire electrical distribution system downstream of this 4.16 kV delivery point, consisting of approximately 0.1 miles of 4.16 kV primary distribution line. It is composed of underground construction (utilizing duct-type construction practices) with pad-mounted transformers.

TROUT CREEK (CONFUSION PEAK)

Electrical power for Trout Creek is supplied from a 12.47 kV primary metered delivery point owned by the local electric supplier. The Air Force owns the entire electrical distribution system downstream of this 12.47 kV delivery point, consisting of approximately 0.01 miles of 12.47 kV primary distribution line. It is composed of underground construction (utilizing duct-type construction practices) with pad-mounted transformers.

CARTER CREEK

Electrical power for Carter Creek is supplied by a 240 volt (V) service drop and meter owned by Bridger Valley Electric Association. There are no Air Force-owned distribution facilities to be privatized at this site.

J1.2.1.2 Inventory

Table 1 provides a general listing of the major electric distribution system fixed assets for the Hill AFB electric distribution system included in the sale. Drawings used to develop the inventory were the Electrical System Supply, Tab G-4, Sheets 1-5 (1993, Revised annually), and the Electrical Distribution Switching Diagram, Sheets 1-3 (2001). A list of the existing utility meters for the electric system was provided by the Installation and was also used in the development of the inventory components.

TABLE 1
 Fixed Inventory
 Electric Distribution System - Hill AFB

Component	Size	Unit	Quantity	Approximate Year of Construction
MAIN BASE				
Overhead Line				
Cable Aerial Aluminum	#4	SCLF	138,445	1971
Cable Aerial Aluminum	#2	SCLF	62,000	1971
Cable Aerial Aluminum	1/0	SCLF	15,400	1971
Cable Aerial Aluminum	2/0	SCLF	29,500	1971
Cable Aerial Aluminum	3/0	SCLF	23,200	1971
Cable Aerial Aluminum	4/0	SCLF	103,613	1971
Cable Aerial Aluminum	1272	SCLF	104,000	1972
Cable Aerial Copper	#6	SCLF	163,062	1971
Underground Line				
Conductor UG Copper	#1	SCLF	607,069	1976
Conductor UG Copper	2/0	SCLF	30,300	1976
Conductor UG Copper	4/0	SCLF	208,200	1976
Conductor UG Copper	500 kcmil	SCLF	30,000	1976
Conductor UG Copper	#1/0	SCLF	30,000	1976
Ductbank				
Ductbank - 4" PVC	1x1	LF	31,800	1976
Ductbank - 4" PVC	1x2	LF	44,510	1976
Ductbank - 4" PVC	1x3	LF	23,690	1976
Ductbank - 4" PVC	2x2	LF	33,127	1976
Ductbank - 4" PVC	2x3	LF	16,100	1976

Component	Size	Unit	Quantity	Approximate Year of Construction
Ductbank – 4" PVC	2x4	LF	3,000	1976
Terminator Cable				
Terminator Cable - Indoor	.975"	EA	963	1982
Terminator Cable - Indoor	1.540"	EA	250	1985
Terminator Cable - Indoor	#1-4/0	EA	380	1982
Terminator Cable - Outdoor	3/0	EA	144	1985
Terminator Cable - Outdoor	400 kcmil	EA	60	1985
Transformers – Pole Mount				
1 PH, Oil Filled	25 kVA	EA	170	1969
1 PH, Oil Filled	37.5 kVA	EA	66	1975
1 PH, Oil Filled	50 kVA	EA	66	1976
1 PH, Oil Filled	75 kVA	EA	38	1971
1 PH, Oil Filled	100 kVA	EA	20	1972
1 PH, Oil Filled	150 kVA	EA	6	1972
1 PH, Oil Filled	300 kVA	EA	3	1972
Transformers – Pad Mount				
1 PH, Oil Filled	37.5 kVA	EA	23	1980
1 PH, Oil Filled	75 kVA	EA	81	1977
3 PH, Oil Filled	37.5 kVA	EA	8	1980
3 PH, Oil Filled	75 kVA	EA	4	1982
3 PH, Oil Filled	150 kVA	EA	60	1985
3 PH, Oil Filled	225 kVA	EA	48	1985
3 PH, Oil Filled	300 kVA	EA	67	1985
3 PH, Oil Filled	500 kVA	EA	69	1985
3 PH, Oil Filled	750 kVA	EA	33	1985
3 PH, Oil Filled	1000 kVA	EA	19	1985
3 PH, Oil Filled	1500 kVA	EA	12	1985
3 PH, Oil Filled	2000 kVA	EA	9	1985
3 PH, Oil Filled	2500 kVA	EA	6	1982
3 PH, Oil Filled	3000 kVA	EA	2	1985
3 PH, Oil Filled	3500 kVA	EA	1	1980
Syracuse 44kV OCB Station				
Transformer, PT	46 kV	EA	1	1980
Circuit Breakers – Oil	46 kV	EA	1	1980
Disconnect, Single Pole	46 kV	EA	9	1980
Lightning Arresters	46 kV	EA	3	1980
Insulators, Pedestal	46 kV	EA	9	1980
Control Batteries		KAH	.75	1999
Battery Chargers		EA	1	1980
Substation #2				
Transformer, Power	46kV	MVA	7.5	2003
Disconnect Switches, GOAB	46 kV	EA	3	2003
Fuses	46 kV	EA	3	2003
Lightning Arresters	46 kV	EA	3	2003
Insulators, Pedestal	46 kV	EA	3	2003
Disconnect Switches, GOAB	13-26 kV	EA	1	2003
Lightning Arresters	13-26 kV	EA	3	2003

Component	Size	Unit	Quantity	Approximate Year of Construction
Circuit Breakers - Vacuum	13-26 kV	EA	3	2003
Control Batteries		KAH	.75	2003
Battery Chargers		EA	1	2003
Substation #3				
Transformer, Power	46 kV	MVA	7.5	2004
Transformer, Power	46 kV	MVA	7.5	2004
Disconnect Switches, GOAB	46 kV	EA	3	2004
Fuses	46 kV	EA	6	2004
Lightning Arresters	46 kV	EA	9	2004
Insulators, Pedestal	46 kV	EA	12	2004
Circuit Breakers - Air	13-26 kV	EA	4	2004
Circuit Breakers - Vacuum	13-26 kV	EA	5	2004
Control Batteries		KAH	.75	2004
Battery Chargers		EA	1	2004
Substation #4				
Transformer, Power	46 kV	MVA	10	1976
Transformer, Power	46 kV	MVA	12	1976
Disconnect Switches, GOAB	46 kV	EA	2	1976
Fuses	46 kV	EA	6	1976
Lightning Arresters	46 kV	EA	6	1976
Insulators, Pedestal	46 kV	EA	6	1976
Circuit Breakers - Air	13-26 kV	EA	4	1976
Circuit Breakers - Vacuum	13-26 kV	EA	5	1992
Control Batteries		KAH	.75	1999
Battery Chargers		EA	1	1980
Substation #5				
Transformer, Power	46 kV	MVA	10	1973
Transformer, Power	46 kV	MVA	12	1973
Transformer, Power	46 kV	MVA	12	2000
Transformer, Power		MVA	16	1973
Fuses	46 kV	EA	9	1973
Lightning Arresters	46 kV	EA	9	1973
Insulators, Pedestal	46 kV	EA	4	1973
Circuit Breakers - Air	13-26 kV	EA	10	1973
Circuit Breakers - Vacuum	13-26 kV	EA	5	1992
Poles				
Wood	25'	EA	50	1971
Wood	30'	EA	174	1971
Wood	35'	EA	296	1971
Wood	40'	EA	516	1971
Wood	45'	EA	234	1971
Wood	65'	EA	120	1972
Steel	60'	EA	4	1972
Pole Arms	6'	EA	1,350	1971
Additional Inventory				

Component	Size	Unit	Quantity	Approximate Year of Construction
Capacitors	13-26 kV	MVAR	5	1982
Voltage Regulator	13-26 kV	EA	8	1973
Guys Anchors and Hardware		EA	264	1976
Lightning Arresters		EA	454	1972
Meter, 1 PH		EA	17	1995
Meter, 3 PH		EA	459	1995
Joints and Dead Ends		EA	284	1971
Gang Operated Switches		EA	57	1977
Disconnect Switches, Single Pole		EA	41	1977
Load Interrupter Switches	13.8 kV	EA	50	1985
Utility Vault	4x6x6	EA	28	1975
Utility Vault	6x10x6	EA	153	1975
Utility Vault	6x12x6	EA	103	1975
Utility Vault	8x14x7	EA	34	1975
Fused Cutouts	8.3 kV	EA	406	1985
Pole, Grounding	8'	EA	320	1985
Aluminum Bus		LF	1,200	1985
Breaker Control Panel		EA	37	1985
Steel Support Structure	Small	EA	3	1985
Steel Support Structure	Medium	EA	6	1985
Steel Support Structure	Large	EA	4	1985
Transformer Grounding	8'	EA	900	1985
Substation Grounding Conductor	4/0	LF	3,000	1985
Transformer Pads	4x6	SF	10,608	1983
Concrete Slabs		SF	2,000	1983
Chain Link Fence		LF	1,000	1983
Concrete Block Partition	8"	SF	6,000	1983
Concrete Foundation		CY	40	1983
MILITARY FAMILY HOUSING				
Overhead				
Cable Aerial Aluminum	#4	SCLF	36,155	1971
Cable Aerial Aluminum	4/0	SCLF	14,487	1971
Cable Aerial Copper	#6	SCLF	23,638	1971
Underground				
Conductor UG Copper	#1	SCLF	67,231	1976
Ductbank				
PVC 4"	1x2	LF	13,790	1976
PVC 4"	1x3	LF	3,510	1976
PVC 4"	2x2	LF	7,773	1976
Transformers - Pole Mount				
Oil Filled, 1 PH	25 kVA	EA	7	1969
Oil Filled, 1 PH	37.5 kVA	EA	21	1975
Oil Filled, 1 PH	50 kVA	EA	12	1976
Oil Filled, 1 PH	75 kVA	EA	4	1971
Oil Filled, 1 PH	100 kVA	EA	3	1972
Transformers - Pad Mount				
Oil Filled, 1 PH	37.5 kVA	EA	10	1980

Component	Size	Unit	Quantity	Approximate Year of Construction
Oil Filled, 1 PH	75 kVA	EA	25	1977
Oil Filled, 3 PH	75 kVA	EA	33	1982
Oil Filled, 3 PH	150 kVA	EA	1	1985
Cable Terminator				
Indoor	.975"	EA	247	1982
Outdoor	3/0	EA	24	1985
Poles				
Wood	30'	EA	46	1971
Wood	35'	EA	92	1971
Wood	40'	EA	168	1971
Additional Inventory				
Guys, Anchors, and Hardware		EA	40	1976
Lightning Arresters		EA	63	1972
Joints and Dead Ends		EA	40	1971
Gang Operated Switches		EA	9	1977
Disconnect Switches, Single Pole		EA	7	1977
Utility Vault	4x6x6	EA	6	1975
Utility Vault	6x10x6	EA	19	1975
Fused Cutouts	8.3 kV	EA	80	1982
Pole, Grounding	8'	EA	80	1982
Transformer, Grounding	8'	EA	120	1982
Transformer Pads	4x6	SF	1,656	1981
UTTR				
Overhead				
Cable Aerial Aluminum	#2	SCLF	737,400	1970
Cable Aerial Aluminum	1/0	SCLF	38,800	1970
Underground				
Cable UG Aluminum 15 kV	#1	SCLF	364,300	1985
Cable UG Aluminum 15 kV	1/0	SCLF	67,900	1973
Cable UG Copper 15 kV	4/0	SCLF	3,000	1985
Transformers - Pole Mount				
1 PH	25 kVA	EA	125	1975
1 PH	37.5 kVA	EA	23	1975
1 PH	50 kVA	EA	38	1975
1 PH	75 kVA	EA	23	1975
1 PH	150 kVA	EA	4	1975
Transformers - Pad Mount				
1 PH	37.5 kVA	EA	6	1985
1 PH	75 kVA	EA	8	1985
3 PH	75 kVA	EA	3	1985
3 PH	150 kVA	EA	16	1985
3 PH	225 kVA	EA	6	1985
3 PH	300 kVA	EA	3	1985
3 PH	500 kVA	EA	3	1985
3 PH	1000 kVA	EA	1	1978
Substation Components				
Battery Charger		EA	1	1995

Component	Size	Unit	Quantity	Approximate Year of Construction
Control Batteries		KAH	0.12	1995
Vacuum Circuit Breaker	13 kV	EA	7	1995
Gang Op Disconnect Switches	46 kV	EA	1	1995
Fuses	46 kV	EA	3	1995
Insulators		EA	3	1995
Lightning Arresters	46 kV	EA	3	1995
Power Transformers	46 kV	MVA	3.75	1963
Voltage Regulators	13 kV	EA	2	1998
Cable Terminators				
Indoor	15 kV	EA	124	1985
Outdoor	15 kV	EA	110	1985
Poles				
Wood	30'	EA	112	1970
Wood	35'	EA	175	1970
Wood	40'	EA	325	1975
Wood	45'	EA	139	1975
Pole Arms	6'	EA	639	1973
Additional Inventory				
Joints and Deadends		EA	36	1973
Gang Op Disconnect Switches		EA	10	1970
Disconnect Switches, Single Pole		EA	12	1970
Ductbank, 4" PVC	1x2	LF	1,500	1973
Guys, Anchors		EA	75	1970
Lightning Arresters		EA	323	1975
Utility Vault	6x10x6	EA	8	1973
Aviation Obstruction Lights		EA	5	1975
Generator Set	1000 kW	EA	1	1995
Generator Building		SF	1,575	1995
Transformer Pads	4x6	SF	1,104	1985
Transformer Pads	4x6	SF	48	2002
Fused Cutouts	8.3 kV	EA	240	1975
Pole, Grounding	8'	EA	190	1975
Aluminum Bus		LF	100	1995
Breaker Control Panel		EA	7	1995
Steel Support Structure	Medium	EA	1	1995
Transformer, Grounding	8'	EA	270	1985
Transformer, Grounding	8'	EA	2	2002
Substation Grounding Conductor	4/0	LF	800	1963
Concrete Slabs		SF	300	1963
Chain Link Fence		LF	400	1963
Concrete Foundation		CY	6	1963
LITTLE MOUNTAIN				
Overhead				
Cable Aerial Aluminum	#2	SCLF	7,700	1960
Underground				
Conductor UG Copper	#1	SCLF	11,300	1960
Substation Components				

Component	Size	Unit	Quantity	Approximate Year of Construction
Air Circuit Breakers	13 kV	EA	5	1960
Disconnect Switch	46 kV	EA	1	1960
Fuses	46 kV	EA	3	1960
Insulators		EA	3	1960
Lightning Arresters		EA	3	1960
Power Transformers	46 kV	MVA	5	1960
Voltage Regulators		EA	1	1960
Cable Terminator, Indoor		EA	24	1961
Transformers				
3 PH, Pad Mount	75 kVA	EA	1	1961
3 PH, Pad Mount	300 kVA	EA	1	1961
3 PH, Pad Mount	750 kVA	EA	1	1961
3 PH, Pad Mount	1500 kVA	EA	3	1961
Additional Inventory				
Ductbank, 4" PVC	1x2	LF	3,800	1960
Guys, Anchors		EA	6	1960
Lightning Arresters	13-26 kV	EA	12	1961
Pole Arms	6'	EA	15	1960
Wood Poles	40'	EA	15	1960
Joints and Deadends		EA	6	1960
Generator Set	300 kW	EA	1	1990
Utility Vault	6x10x6	EA	12	1960
Transformer Pads	4x6	SF	144	1961
Fused Cutouts	8.3 kV	EA	12	1961
Pole, Grounding	8'	EA	4	1961
Aluminum Bus		LF	100	1961
Breaker Control Panel		EA	5	1961
Steel Support Structure	Medium	EA	1	1961
Transformer, Grounding	8'	EA	18	1961
Substation Grounding Conductor	4/0	LF	800	1961
Concrete Slabs		SF	300	1961
Chain Link Fence		LF	400	1961
Concrete Foundation		CY	6	1961
BOULDER				
Shielded Cable, Aluminum 5 kV	#1	SCLF	1,200	1960
Ductbank, 4" PVC	1x2	LF	400	1960
Lightning Arresters		EA	3	1960
Cable Terminators, Indoor		EA	24	1960
Cable Terminators, Outdoor		EA	3	1960
Transformer, 1 PH, Pad Mount	37.5 kVA	EA	12	1960
Transformer Pads	4x6	SF	288	1960
Fused Cutouts	8.3 kV	EA	3	1960
Transformer, Grounding	8'	EA	12	1960
BOVINE				
Shielded Cable, Aluminum 15 kV	#1	SCLF	19,000	1993
Ductbank, 4" PVC	1x2	LF	300	1993
Lightning Arresters		EA	3	1993

Component	Size	Unit	Quantity	Approximate Year of Construction
Cable Terminators, Indoor		EA	3	1993
Cable Terminators, Outdoor		EA	3	1993
Transformer, 3 PH, Pad Mount	75 kVA	EA	1	1993
Transformer Pads	4x6	SF	24	1993
Fused Cutouts	8.3 kV	EA	3	1993
Transformer, Grounding	8'	EA	1	1993
TROUT CREEK				
Shielded Cable, Aluminum 15 kV	#1	SCLF	80	1989
Ductbank, 4" PVC	1x2	LF	25	1989
Lightning Arresters		EA	3	1989
Cable Terminators, Indoor		EA	3	1989
Cable Terminators, Outdoor		EA	3	1989
Transformer, 3 PH, Pad Mount	75 kVA	EA	1	1989
Transformer Pads	4x6	SF	24	1989
Fused Cutouts	8.3 kV	EA	3	1989
Transformer, Grounding	8'	EA	1	1989
WENDOVER FIELD				
Aerial Aluminum Cable ACSR	#2	SCLF	19,500	1955
Guys, Anchors		EA	4	1955
Lightning Arresters		EA	15	1960
Pole Arms	6'	EA	38	1960
Wood Poles	35'	EA	9	1960
Wood Poles	40'	EA	29	1960
Joints and Deadends		EA	6	1955
Transformers, 1 PH	37.5 kVA	EA	9	1960
Transformers, 1 PH	50 kVA	EA	6	1960
Fused Cutouts	8.3 kV	EA	18	1960
Pole, Grounding	8'	EA	10	1960
Transformer, Grounding	8'	EA	5	1960

Notes:

UG = underground	PH = phase
OH = overhead	kV = kilovolt
ACSR = aluminum-conducting-steel-reinforced	kVA = kilovolt ampere
kcmil = thousand circular mils	GOAB = gang operated air brake
PVC = polyvinyl chloride	LF = linear feet
SF = square foot	EA = each
KAH = kilo ampere hours	SCLF =
kW = kilowatt	MVAR = mega volt ampere reactive
MVA = mega volt ampere	CY = cubic yards

J1.2.2 Electric 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
Electric Distribution System - Hill AFB

Quantity	Item	Description	Remarks
40	Wood Poles	40' - 45'	Quantity on hand is variable.
50	Transformers	15kVA - 500 kVA, pole and pad-mount	Quantity on hand is variable.
	Electric Cable	Various sizes/types	Quantity on hand is variable.
20	Cross Arms	6'	Quantity on hand is variable.
	Anchors, guy wire, ground rods, insulators, misc. hardware		Quantity on hand is variable.

TABLE 3
 Specialized Vehicles and Tools
Electric Distribution System - Hill AFB

Description	Quantity	Location	Maker
None			

J1.2.3 Electric Distribution System Manuals, and Records Drawings,

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

TABLE 4
 Manuals, Drawings, and Records
Electric Distribution System - Hill AFB

Quantity	Item	Description	Remarks
1	Drawing	Comprehensive Plan, Tab G-4, 1993	Sheets 1-5
1	Listing	Electric Meters	Shows building served, some with building square footage
1	Drawing	Electrical Distribution Switching Diagram, 2001	Sheets 1-3
1	Manual	Transformer Manual	7.5 - 10 MVA
1	Manual	Substation Manual	
1	Drawing	UTTR Electric Utility Maps	
1	Drawing	Little Mountain Electric Utility Maps	

J1.3 Specific Service Requirements

The service requirements for the Hill AFB electric distribution system are as defined in the Section C, *Description/Specifications/Work Statement*. The following requirements are specific to the Hill AFB electric 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.

- The Contractor will be required to mark his own utilities and will be responsible for initiating, officiating, and tracking digging permits for his own utilities. The Contractor will provide not less than 5 and not more than 15 working days notice of any needed excavations to 75 CES and to said Utilities Privatization Administrative Contracting Officer so the location of underground utilities may be located and marked by the applicable utility owner.
- The Contractor shall enter into a Memorandum of Understanding (MOU) with the Base Fire Department for fire protection of all facilities included in the purchase of the utility. The MOU shall be completed during the transition period and a copy provided to the Contracting Officer.
- The Contractor must pursue frequency approvals for portable radios as early as possible during the transition period.
- Because of the critical nature of many Hill AFB mission requirements, response to power outages must be immediate. For the Main Base, the Contractor must have a first response on the scene not later than 30 minutes (24 hours a day / 7 days a week) after notification.
- At the UTTR, the Missile Storage Area (MSA) is the most critical load. Apart from the critical alarm system, certain components of stored missile motors (solid propellants) have critical temperature and humidity storage parameters. If air conditioning units are inoperable, there is a finite period of time (partially dependent on ambient temperature and humidity) to restore the HVAC system before the missile components suffer irreparable damage. A total failure could result in multiplied millions of dollars in damages. A 4-hour window has been established as the maximum HVAC system down time. Technicians must respond to system problems within 2 hours, which gives them only 2 hours to effect repairs and get the systems back on line.

J1.4 Current Service Arrangement

UP&L provides electrical power for the Main Base, UTTR, and Little Mountain Test Annex. Power to the smaller, more remote GSUs is provided by local electric cooperatives.

The peak month for electric consumption in FY 2002 was July at 24,960 megawatt hours (MWh); August was only slightly lower. Consumption during the other 10 months was approximately 21,000 MWh. The monthly average (based on FY 2002 data) is 22,117 MWh for the Main Base, UTTR, Little Mountain, Boulder, and Carter Creek combined. For 2002, peak demand for the Main Base was 44.3 MW with peak demand for UTTR and Little

Mountain at 1.164 MW and 1.276 MW, respectively. **Table 5** shows total annual consumption for FY 2002 by location:

TABLE 5
 FY 2002 Consumption
Electric Distribution System - Hill AFB

Location	MWh
Main Base	255,195.97
UTTR	6,763.63
Little Mountain	3,283.20
Boulder	86.095
Carter Creek	77.08

J1.5 Secondary Metering

J1.5.1 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 Contractor. The Contractor shall provide meter readings for all secondary meters IAW Paragraph C.3.3 and J1.6 below:

TABLE 6
 Existing Secondary Meters
Electric Distribution System - Hill AFB

Building Number	Meter Number	Building Number	Meter Number	Building Number	Meter Number
IA	70162416	509	10084986	1223	31467116
1	10313553	510	63485605	1224	31259215
1	83087106	511	10084988	1225	13765629
1	83087153	511	63485611	1226	22984907
1	83087145	513	10292822	1227	22984909
3	83087104	514	91448884	1228	22984911
5F	64430454	515	10084976	1229	44700795
5	10314546	515	10084995	1231	77788936
5M	10313544	519	10313551	1232	65182356
5J	10313552	520	20430903	1233	31259214
5	10084965	521	10085004	1235	20072926
5	10084967	523	64714377	1235	20072925
5	10084968	524	83186204	1235	20072927
5D	10313550	525	10292824	1237	10085001
5	10084966	526	64713732	1239	22984905
5E	20072903	534	10292823	1241	68086944
5	20072904	546 N	1180684	1244	91448913
8	1434861	555	10292825	1245	93283909

Building Number	Meter Number	Building Number	Meter Number	Building Number	Meter Number
11	10084987	564	83186203	1248	22984899
13	10084958	567	92656535	1253	22984913
14	82587472	568	10084957	1255	22984915
25	30965173	570	9507b158	1258	22984920
35	79885035	570 Annex	316461	1265	63584190
36	1000624	575	10084960	1265	63488065
37	20430919	575	10084961	1267	63583434
39	71479744	575	10084962	1268	20430918
39	10313545	575	10084963	1269	63584563
40	78902477	575	10084964	1276	61311876
42	1000570	576	64585271	1277	83186210
43	70375902	576	63485609	1283	83087140
45	1000621	584	71386326	1284	83087143
45RES	10084947	586	6200	1285	83087148
48	20072898	589	10292826	1286	22984904
50	31053373	590	20072895	1289 NE	20072905
54	1000641	593	80795060	1288	20072922
55	1000565	597	64418111	1289	22984900
56	20072900	708	1434851	1289	22984897
58	10084994	710	83186205	1289	22984912
100	59188182	720	17588801	1289	22984888
100	58796175	10040	92631038	1294	22984926
100J	10084984	743	70412064	1295	83087144
100J	20072909	744	43169402	1320	80885086
100C	10084981	749	21117488	1321	10085010
100C	17588803	751	20430927	1322 CRANE	91448916
100	10084980	755	31047476	1328	85468287
100	10084983	758	83585170	1377	91448908
100	10084982	777	83087103	1378	76261083
100D	10013547	782	81910421	MAMS I SUB 1	22984923
100	20072899	783	81892979	MAMS I SUB 2	22984924
100	20430900	800 20S3W	10084953	MAMS I SUB 3	22984902
100	20072890	800 20S2W	85018497	1403	1117271
100	63486120	800 20S10W	10084954	N. of 1404	18827342
100	20072897	800 20S14W	10084970	N. of 1403	18827341
100	59188181	800 20S19W	10084972	1424	22984895
100	10084971	800 20S20W	10084956	1424A	22984893
118	50983771	804	1434852	1477	18159457
118	10292818	805	1000583	1478	60435052
119	64609211	810 16S7W	85018494	1506	83186189
120	10292817	810 17S4W	8518501	1515	31008419
125	13765627	816	54302511	1515	31008732
133	10292821	820	83087109	1515	31030449
141	10292819	820	20072891	1515	31030448
142	20430929	820	20072892	1530	30996337
146	20430926	820	83087147	1540	70411442

Building Number	Meter Number	Building Number	Meter Number	Building Number	Meter Number
150	10084992	825	20072894	1540	84310828
179	1434863	830	84630246	1540	70329633
180	68890749	830	85018507	1540	30914449
200	83185098	830 B	17588802	1552	87416470
202	98020449	839	10313549	1558	28429394
205	83087151	840	85018493	1600	68086824
205	83087102	840	85018511	1621	84310851
205	83087150	841	85658543	1623A	452168
206	10084943	843	20072896	1624	78709794
214	10084948	845	20430924	1625	22984916
216	13765625	845	20430925	1631	63487166
220	78186457	847	16599977	1642	91448679
220	18646753	847	84310808	1643	78587587
220	31012871	E. of 847	17750545	1702	83087107
220	18578472	S. of 847	21289833	1702	83087099
222	10084991	849	17135	1703	78709796
225	60489060	849	81489338	1723	83087146
225	60392217	849	81489342	1724	21091243
228	10084939	849	81489341	1781	84485891
TEST CELL	10084973	849	81785137	1800 ZONE	75391172
230	10084941	850	20072901	1803	78822108
230	10084993	850B	13765624	1804	22984919
230	10084937	850	20072902	1833	63987290
232	70248835	859	10084940	1903	22984894
233NW	31004619	860	20072929	1904	83071930
233	20072911	865	1112300	1913	70231259
236	20072921	880	31020057	1915	70231261
238	C99110416	883	83087149	1915	92556350
238	31022834	888	1319648	1917	91448883
238	945200	891	78391210	1917	92580689
240	945296	891	78391211	1919	200729908
244	10084996	896	84310813	1930	76168634
245	91448899	897	20072919	1933	70231258
247	92529885	898	80125386	1936S	76470673
249	20072893	900	20072915	1938	86149880
250	10931620	900	20072924	1942	79286863
252	13471162	903	63987296	1955	83087137
252	16388188	903	1442858	2005	85018491
252	16388187	911	20430921	2009	79286860
257	20430902	914	20430923	2013	84310834
257	20430920	910	85018500	2016	20072892
260	10084945	915	20072920	2022	22984910
265W	5958	10915	84629480	2014	91448887
265E	5984	918	22984901	2024	91448904
270	302311	924	85658540	2025	78707080
270	10084950	937	69721468	2026	68086942

Building Number	Meter Number	Building Number	Meter Number	Building Number	Meter Number
271	62256445	938	69721442	2104	75900725
275	2979848	940	48846164	2113	91448898
276	55140454	945	92529884	2113	91448890
279	63487164	947	22984903	2136	84102171
287	10084949	950	63486514	2136	49260315
295	10084944	965	91448915	2146	70086849
308	10084952	970	91448906	2203	78707079
332	10084951	975	91446722	2205	84310841
348	76279959	980	91448911	2221	79286878
357	85018503	981	91435219	2234	84310375
358	63487170	982	91435220	2234	85018499
363-4-5	76279920	983	91446087	2401	22984886
366	10084989	985	11654678	2402	91448914
383	10292820	988	84927468	2403	22984917
385	10084936	T-1710	97928397	2404	22984896
385	93770530	T-2710	97928387	2405	91448912
400	20430928	1107	83185601	2406	85018492
401	10084942	1107	83087110	2407	91448910
402	83087117	1118	10085002	2408	91448907
402	83087141	1132	22984885	2411 XFMR	91448900
405	10084938	1133	85658542	12914	94141758
418	55430596	1134	83087114	5184	74681964
420	2538710	1135	1000614	5186	7885033
430	10084977	1135	22984906	5185	78587590
431	20072923	1138	54102119	5187	84085973
440	83087139	1141	22984898	D HSG	20072906
441	10084978	1151	83505832	E HSG	10084990
442	10313548	1153	22984922	F HSG	22984929
445	430923922	1160	10354958	G HSG	22984925
450	10084946	1160	10354887	MWR SIGN	83078100
460	10084975	1201	20072916	OU 1B	17002050
461	20072928	1203	20072914	OU 2	70416214
470	10084979	1204	20072913	5196	93744129
472	85185183	1205	20072907	BUBBLE	83087105
475	10084985	1206	20072912	10521	83087111
480	13765626	1207	20072910	10758	2922386
483	10084935	1208	22984914	10758 shed	950902
503	92542755	1209	22984918	Hill Field S.	2242
505A	314702	1210	3000466		70272994
507N	10084999	1211	68099388	S. to UP&L	70272996
507	10084997	1212	47562001	River - UP&L	70272997
507	10084998	1212	10084969		64852327
507	10085000	1213	22984908		75185-174
507	61190279	1214	10085003		75185-189
507	71587095	1215	17588804		75185-178
507A	61190280	1217	31259140		75385-798

Building Number	Meter Number	Building Number	Meter Number	Building Number	Meter Number
507B	204430901	1218	19405280		9144801802588
507C	61190281	1221	1058640		21 175 109
508	13765628	1222	63581231		

J1.5.2 Required New Secondary Meters

The Contractor shall install and calibrate new secondary meters as listed in **Table 7**. New secondary meters shall be installed IAW Paragraph C.13, Transition Plan. After installation, the Contractor shall maintain and read these meters IAW Paragraphs C.3.3 and J1.6 below.

TABLE 7
 New Secondary Meters
Electric Distribution System - Hill AFB

Meter Location	Meter Description
The Installation has identified no new secondary meter requirements.	

J1.6 Monthly Submittals

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

1. **Invoice** (IAW G.2): The Contractor’s monthly invoice shall be presented in a format proposed by the Contractor and accepted by the Contracting Officer. Invoices shall be submitted by the 25th of each month for the previous month. Invoices shall be submitted to:

Name: 75 CES/CEEE (AF Utilities Privatization)
Address: 7302 Wardleigh Rd
 Hill AFB, UT 84056
Phone number: (801) 777-5944

2. **Outage Report:** The Contractor’s monthly outage report will be prepared in the format proposed by the Contractor and accepted by the Contracting Officer. Outage reports shall be submitted by the 25th of each month for the previous month. Outage reports shall be submitted to:

Name: 75 CES/CEI (AF Utilities Privatization)
Address: 7302 Wardleigh Rd
 Hill AFB, UT 84056
Phone number: (801) 777-2966

3. **Meter Reading Report:** The monthly meter reading report shall show the current and previous month readings for all secondary meters. The Contractor’s monthly meter reading report will be prepared in the format proposed by the Contractor and accepted

by the Contracting Officer. Meter reading reports shall be submitted by the 15th of each month for the previous month. Meter reading reports shall be submitted to:

Name: 75 CES/CEEE (AF Utilities Privatization)
Address: 7302 Wardleigh Rd
Hill AFB, UT 84056
Phone number: (801) 777-5944

4. **System Efficiency Report:** If required by Paragraph C.3, the Contractor shall submit a system efficiency report in a format proposed by the Contractor and accepted by the Contracting Officer. System efficiency reports shall be submitted by the 25th of each month for the previous month. System efficiency reports shall be submitted to:

Name: 75 CES/CEI (AF Utilities Privatization)
Address: 7302 Wardleigh Rd
Hill AFB, UT 84056
Phone number: (801) 777-2966

J1.7 Energy Saving Projects

A project is currently underway to pipe natural gas from a Davis County landfill just east of Hill AFB to the Installation. The natural gas will be used to power an electrical generator with an estimated output of 1.2 MW, which will be integrated into the Hill AFB electrical distribution system. The generator will be privately owned for 20 years and will thus be excluded from the UP package. Progress/status of this project will be available in the technical library.

J1.8 Service Area

IAW Paragraph C.4, Service Area, the service area is defined as all areas within the Hill AFB boundaries and the boundaries of Hill GSUs.

J1.9 Off-Installation Sites

All Hill AFB GSUs (UTTR, Little Mountain, Bovine, Boulder, Trout Creek, Wendover, and Carter Creek) are described in the preceding paragraphs. All except Carter Creek have Air Force-owned electric distribution system components included in this solicitation.

J1.10 Specific Transition Requirements

IAW Paragraph C.13, Transition Plan, **Table 8** provides a listing of service connections and disconnections required upon transfer. Intent is to separate the electric, natural gas, and water distribution systems in the military family housing areas from the main base. The wastewater collection system is not to be separated and will remain as a base utility system.

TABLE 8
Service Connections and Disconnections
Electric Distribution System - Hill AFB

Description
Description of Scope to Sever electrical, natural gas and water distribution systems from main base to Military Family Housing at Hill AFB
<p>Introduction: This narrative is a description of the basic scope of required tasks to sever the Hill AFB electrical, natural gas, and water distribution systems from housing areas D, E, F, and G, and should be construed as part of a service contract or any other legally binding document. The information herein was derived by studying utility maps and interviewing personnel in CE's Exterior Electrical Shop and Utility Shop. In order to actually implement the recommendations of this document, a thorough inspection involving excavations should be done prior to the preparation of engineered drawings and specifications. Under this plan, the Youth Center (building 883) and Southwest Gate Guard Shack (building 8886) should still be supplied electric, and water by the Hill AFB distribution system. There is no gas service to the guard shack at this time and none is planned.</p>
<p>1. Electrical - Currently, electrical power is provided to Military Family Housing (MFH) at two locations via overhead power lines from Hill AFB. MFH, Area G is supplied by an overhead feed originating from a pole (assumed to be #251) located in Lot 8 near Wardleigh Road just west of Building 847. Not all power poles are numbered, so some poles will be described based on their relative location to those poles that are numbered. At a location three poles past pole #253 in a southwesterly direction, the power feed for the Base Petroleum Tank Farm branches off from the power feed into MFH, Area G. The line should be severed between this pole and the first pole leading into the tank farm. The line should also be severed between power pole #253 and the first pole past pole #253. However, in order for Hill AFB to provide power to the Tank Farm, at least one extra power pole would need to be installed to continue the line from pole #253 to the first pole into the tank farm. The electrical supply loop in MFH Area G should still be unbroken at this location, but will no longer be supplied power from the Base at this location. Severing the Area G supply line from Hill AFB also denies power to the DRMO Compound located along Arsenal Road, west of Area G housing. In order for Hill AFB to supply power to the DRMO Compound, an overhead line, complete with about nine new poles, needs to be run from pole #253 around the north side of Area G housing to pole #993 on the east side of the DRMO Compound fence. The connection of the DRMO Compound power to Area G housing needs to be severed east of pole #1001 at the southeast end of the DRMO Compound near the corner of Washington Street and North Liberty Street.</p>
<p>1.1. MFH Areas D, E, and F are supplied power by an overhead feed from pole #340 located on the northwest corner of the parking lot at building 800. The line should be severed between this pole and the first pole across 11th Street (assumed to be pole #341). Poles 341, 342, and 343 can then be removed. This would still leave the supply loop in MFH, Areas D, E, and F intact. Utah Power can supply power for MFH Areas D, E, F,</p>

and G via power lines owned by Utah Power along the north side of Highway 193 just outside the south end of Areas D & E housing. There would need to be two connections, one at a power pole in the back yard of housing unit #3345B on Liberty Way, northwest of Pond 4; and the other at the pad mounted transformer behind housing unit #3117A on Liberty Way. A substation large enough to handle Areas D, E, F, and G would also need to be built near this pad mounted transformer behind the housing units.

1.2. There are still two Air Force owned entities located in the middle of the MFH areas that Hill AFB would not be able to provide power to, after MFH has been severed from the base grid, and connected to the municipal grid. Those entities are, The Youth Center (Building 883), and the Southwest Gate guard shack (Building 886). These facilities would need to be fitted with a meter, and monthly reimbursement payments made by the Air Force to the MFH provider for the power to these facilities.

J1.11 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 Hill AFB electric distribution system. If the system is sold, the Government will not accomplish these planned improvements. The 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
Electric Distribution System - Hill AFB

Project Location	Project Description
Hill AFB	Replace H-Frame Structures with Pole-type transformers
Hill AFB	Replace Pole-type transformers on the ground with pad-type
UTTR	Replace Pole-type transformers on the ground with pad-type
UTTR	H-Frame and Switch Replacements
UTTR	Add 70 spans of static neutral
UTTR	Need Load Study-Voltage Rise Problem