ATTACHMENT J1

Altus AFB Electric Distribution System

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J1 Altus AFB Electric Distribution System

J1.1 Altus AFB Overview

Altus Air Force Base (AFB), located within the Altus city limits in Jackson County, Oklahoma, is an Air Education and Training Command (AETC) installation that operates AETC's strategic airlift and aerial refueling flying training schools. Altus AFB is the Air Force's primary Air Mobility Training Center for pilots, navigators, flight engineers, loadmasters, and boom operators. The host command is the 97th Air Mobility Wing (97 AMW). The Wing is the nation's only C-5, C-17, and KC-135 strategic airlift, aerial delivery, and aerial refueling training school.

Altus AFB occupies 4,698 acres, including 338 acres in Military Family Housing (MFH), (acquired circa 1941). The Base contains approximately 1,000 buildings totaling over 3.6 million square feet (msf) comprised of the following major functional categories: Industrial: 744,000 square feet (SF); Administrative: 246,000 SF; MFH: 1,330,000 SF; Unaccompanied Housing: 430,000 SF; Transient Quarters: 16,000 SF; and Other Community/Support: 834,000 SF. Altus AFB has two runways and one assault strip. The primary runway measures 13,440 feet by 300 feet; the parallel runway measures 9,000 feet by 225 feet; and the assault strip measures 3,500 feet by 150 feet. Authorized aircraft for this Installation are C-5As, KC-135Rs, and C-17s.

There are no known factors that would effect any significant changes in total Altus building space and the consequent increase or decrease of utility requirements.

The Base has a total population of approximately 5,000, including military personnel, civilian employees and support personnel, students, and dependents. Based on payroll, construction, and operational expenditures, it is estimated that Altus AFB has a profound economic impact on the local community of over $345 million annually.

J1.2 Electric Distribution System Description

J1.2.1 Electric Distribution System Fixed Equipment Inventory

The Altus 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 with the exception of switching station 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.

J1.2.1.1 Description

Electrical power for Altus AFB is purchased from Western Farmers Electric Cooperative (WFEC) at 12.47 kilovolts (kV) from a WFEC-owned 69-12.47 kV substation located near the Installation's Main Gate. The supplier's 12.47 kV metering equipment is located in this substation. This substation supplies a single 12.47 kV service to the Air Force's adjacent switching station. WFEC ownership terminates at the face of their 12.47 kV steel dead-end structure.

The Air Force owns the electrical distribution system downstream of this delivery point. This distribution system serves the entire Base including the Military Family Housing (MFH) areas. The previously described WFEC facilities are the only non-Government owned electrical distribution facilities on Base. All other electrical distribution equipment on Base is owned by the Air Force.

The switching station is a conventional, outdoor, air-insulated, distribution substation configured in a main-and-transfer bus arrangement with six 12.47 kV, three phase, hydraulic, oil circuit reclosers. This switching station provides control, and over-current protection for six 12.47 kV feeders. The switching station has a parallel bus configuration. All six feeders are supplied from the same bus. A transfer breaker can transfer power from one bus to another. This action transfers all six feeders simultaneously.

The primary distribution system consists of a total of six 12.47 kV circuits. It is composed of overhead, pole-line construction (narrow profile, 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 approximately 10 percent of the electrical duct bank in the Main Base area lies beneath 6-inch asphalt pavements.

The overhead primary system is principally composed of bare aluminum conductor steel reinforced (ACSR) conductors of various sizes, with #2, 2/0, and 4/0 the most common. The underground primary system is principally composed of shielded copper conductors of various sizes, with 15 kV #2 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 have been replaced.

There are no electrical distribution assets to be privatized at satellite operating locations (NEXRAD Radar Site, ILS Middle Marker Site, and Drop Zone).

J1.2.1.2 Inventory

Table 1 provides a general listing of the major electric distribution system fixed assets for the Altus AFB electric distribution system included in the sale. Drawings used to develop the inventory were the Altus Master Plan, Tab G-4, Sheets 1-7 (1997) and the Altus Site Electrical Distribution Plan Tab C-32, Sheets 34 and 35 of 69 (1999). 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 - Altus AFB

Item	Size	Unit	Quantity	Approximate Year of Construction
MAIN BASE				
Overhead				
Cable Aerial Aluminum ACSR	4/0	SCLF	96,303	1984
Cable Aerial Aluminum ACSR	2/0	SCLF	27,257	1984
Cable Aerial Aluminum ACSR	#2	SCLF	89,445	1984
Cable Aerial Aluminum ACSR	#4	SCLF	11,767	1984
Underground				
Conductor UG Copper	500 kcmil	SCLF	9,735	1984
Conductor UG Copper	4/0	SCLF	32,502	1984
Conductor UG Copper	2/0	SCLF	12,154	1984
Conductor UG Copper	1/0	SCLF	840	1984
Conductor UG Copper	#1	SCLF	1,782	1984
Conductor UG Copper	#2	SCLF	170,372	1984
Circuit Breakers				
Breakers (A, B, C, E, F)	13-26 kV	EA	5	1984
Transformers – Pole Mount				
Transformers, Oil Filled, 1PH	5 kVA	EA	15	1984
Transformers, Oil Filled, 1PH	10 kVA	EA	41	1984
Transformers, Oil Filled, 1PH	15 kVA	EA	33	1984
Transformers, Oil Filled, 1PH	25 kVA	EA	72	1984
Transformers, Oil Filled, 1PH	37.5 kVA	EA	63	1984
Transformers, Oil Filled, 1PH	50 kVA	EA	73	1984
Transformers, Oil Filled, 1PH	75 kVA	EA	45	1984
Transformers, Oil Filled, 1PH	100 kVA	EA	27	1984
Transformers, Oil Filled, 1PH	167 kVA	EA	6	1984

Item	Size	Unit	Quantity	Approximate Year of Construction
Transformers – Pad Mount				
Transformers, Oil Filled, 1PH	25 kVA	EA	22	1984
Transformers, Oil Filled, 1PH	50 kVA	EA	8	1984
Transformers, Oil Filled, 1PH	75 kVA	EA	12	1984
Transformers, Oil Filled, 3PH	45 kVA	EA	7	1984
Transformers, Oil Filled, 3PH	112.5 kVA	EA	2	1984
Transformers, Oil Filled, 3PH	150 kVA	EA	5	1984
Transformers, Oil Filled, 3PH	225 kVA	EA	2	1984
Transformers, Oil Filled, 3PH	250 kVA	EA	3	1984
Transformers, Oil Filled, 3PH	300 kVA	EA	3	1984
Transformers, Oil Filled, 3PH	500 kVA	EA	11	1984
Transformers, Oil Filled, 3PH	750 kVA	EA	3	1984
Transformers, Oil Filled, 3PH	1000 kVA	EA	2	1984
Transformers, Oil Filled, 3PH	1500 kVA	EA	6	1984
Transformers, Oil Filled, 3PH	2000 kVA	EA	2	1984
Concrete Pad	4x6	SF	2,112	1984
Switching Station				
Oil Circuit Recloser, 3PH hydraulic	14.4 kV	EA	6	1983
Copper Cable (aerial)	500 kcmil	SCLF	1,500	1983
Copper Tubing	1.5″	LF	480	1983
Gang Operated Switches	13-26 kV	EA	20	1983
Lighting Arrestors	13-26 kV	EA	21	1983
Exterior Fixtures, Mercury Vapor	400 watt	EA	10	1983
Services, 3-pole, 100 amp	600V	EA	1	1983
Substation insulators, ped type		EA	120	1983
Substation Lighting Arrestors	13-26 kV	EA	21	1983
Terminator Cable	15 kV	EA	18	1983
Transformer, 1PH	25 kV	EA	1	1983
Concrete Foundation		CY	50	1983
UG Cable	4/0	SCLF	1,200	1983
Structural Steel	W8x10	LF	904	1983
Chain Link Fence		LF	266	1983
Additional Inventory				
Guys, Anchors		EA	227	1984
Lightning Arrestors		EA	413	1984
Capacitors	13-26 kV	MVAR	4	1984
Pole, Wood	40′	EA	480	1984
Pole, Metal	40′	EA	290	1984
Cross Arms	4′	EA	890	1984
Deadends/Joints		EA	30	1984
Meters	1P/3W	EA	156	1984
Gang Operated Switch, Manual		EA	10	1984
Ductbank, PVC 2x3	4″	LF	130,009	1984

Item	Size	Unit	Quantity	Approximate Year of Construction
Manhole, Precast	4x6	EA	60	1984
Terminator Cable Indoor	15 kV	EA	138	1984
Terminator Cable Indoor	15 kV	EA	834	1984
Cable Terminations	13-26 kV	EA	87	1984
Fused Cutouts	15 kV	EA	400	1984

Notes:
AWG = American Wire Gauge
EA = each
Nom kVA = nominal kilovolt-amperes
PH = phase
kcmil = thousands of circular mils
SF = square foot
UG = underground
CY = cubic yard
PVC = polyvinyl chloride
CT = current transformers
ACSR = aluminum conductor steel reinforced
SCLF = single conductor linear feet
kV = kilovolt
V = volts
W = wire
kVA = kilovolt ampere
OH = overhead
MVAR = mega volt ampere reactive
PT = power transformers
MFH = Military Family Housing

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 - Altus AFB

Quantity	Item	Description	Remarks
20	Wood Poles	40′ – 45′	Quantity on hand is variable
40	Transformers (Pole & Pad-Mount)	15 – 500 kVA	Quantity on hand is variable

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

Description	Quantity	Location	Maker
None			

J1.2.3 Electric 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
Electric Distribution System - Altus AFB

Quantity	Item	Description	Remarks
1	Drawing Set	Altus Master Plan, Tab G-4, 1997	Sheets 1 - 7
1	Drawing Set	Altus Site Elect. Distribution Plan, Tab C – 32, 1999	Sheets 34 - 35
1	Transformer Master Reference Manual	Describes all transformers on the Installation (age, manufacturer, capacity, etc.)	Located in the Electric Shop
1	Listing	Electric Meters	Reflects building number and function

J1.3 Specific Service Requirements

The service requirements for the Altus AFB electric distribution system are as defined in the Section C, *Description/Specifications/Work Statement*. The following requirements are specific to the Altus 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 two (2) and not more than five (5) working days notice (emergencies being excepted) of any needed excavations to 97 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 applicable utility owner must mark their utilities as requested within forty-eight (48) hours of receipt of request for non-emergency work.
- 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.

J1.4 Current Service Arrangement

- ***Provider Name:*** Western Farmers Electric Cooperative (WFEC)
- ***Usage:*** Total electrical consumption for FY 2002 was 72,728,960 kWh; Peak demand is approximately 19,000 kW using no load management procedures.
- ***Usage Fluctuations:*** Monthly fluctuations are caused primarily by the severity of summer temperatures that drive up heating, ventilation, and air conditioning (HVAC) electrical consumption. July and August are the peak months with consumption around

8 million kWh. At the low end, during winter months, consumption is around 5 million kWh.

- There are no apparent regulatory obstacles to the Installation's UP process.

J1.5 Secondary Metering

J1.5.1 Existing Secondary Meters

Table 5 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 5
Existing Secondary Meters
Electric Distribution System - Altus AFB

Meter Count	Facility Function	Building Number
1	CE SLAVE METER	362
2	MOTOR POOL	353
3	SUPPLY	369A
4	SUPPLY	369B
5	POL BASE SUPPLY	T382
6	HAZARD WASTE STORAGE	502
7	CORROSION CONTROL	402
8	RECYCLE CENTER	400
9	CE HOLDING AREA	501
10	SOCIAL ACTION	418***
11	AIRCRAFT GENERAL PURPOSE	424
12	HANGER	509
13	ENVIRONMENTAL PUMP STATION	425
14	POLICE DOG TRAINING	429
15	CT'S—SOUTH RAMP	459
16	SECURITY POLICE	492
17	EXT 7714-ASR	420
18	RADAR	421
19	RAPCON	415
20	VORTAC	411
21	SAC MUNITIONS STORAGE	476
22	HANGAR	517
23	HANGAR	514
24	POL FUEL FARM	385
25	BASE SUPPLY	394B
26	BASE SUPPLY ADMIN	395
27	RV PARKING LOT	971
28	FIRING RANGE	399
29	ENVIRONMENTAL (CEV)	396
30	ARTS & CRAFTS (MWR)	343
31	HOBBY SHOP (MWR)	342
32	MAIN GATE	2000
33	COMMISSARY (AFCOMS)	16

Meter Count	Facility Function	Building Number
34	BALLFIELD (MWR)	1998
35	BALLFIELD #3 (MWR)	2001A
36	BALLFIELD BATHROOMS	1996***
37	BALLFIELD #3 SCOREBOARD	2001B
38	BASE HOUSING (MFH) MASTER**	MFH-A
39	BASE HOUSING (MFH) MASTER**	MFH-B
40	AUTO TELLER	17
41	BX (AAFES)	18
42	GAS STATION (AFFES)	303
43	PAVILION	1957
44	HOUSING MAINTENANCE	2002
45	NEW BASE HOUSING METER A**	MFH
46	NEW BASE HOUSING METER B**	MFH***
47	TENNIS COURTS	1872
48	YOUTH CENTER (MWR)	1866
49	GUEST HOUSING	25
50	BILLETING TLF	26
51	HOSPTIAL	46A
52	HOSPTIAL XRAY	46B
53	BIO ENV-VET (HOSP)	48
54	NEW CHILD CARE	53
55	DENTAL CLINIC (HOSP)	47
56	OFFICERS CLUB (MWR)	39A
57	OFFICERS CLUB STORAGE	38
58	OFFICERS CLUB POOL/BATH HOUSE	42/43
59	OFFICERS CLUB (MWR)	39B
60	OFFICERS CLUB (MWR)	39C
61	CONSOLIDATED SUPPORT	52***
62	POL HYDRO PIT NORTH	565A
63	PUMP HOUSE TWO	565B
64	GOLF COURSE PUMPS	565C
65	SAC ALERT FACILITY	570A
66	SAC LIGHT POLE	570C
67	SAC LIGHT POLE	570B
68	SAC	566
69	SAC LIGHT POLE	570D
70	MAIN/GOLF CR. (MWR)	32/33
71	CONTRACTOR	30
72	GOLF CLUB MASTER (MWR)	35A
73	METER A – GOLF CR (MWR)	35B
74	METER L – GOLF CR (MWR)	35C
75	MWR SUPPLY / GOLF COURSE	36
76	OBSERVATORY	OBSERV.
77	JOGGING PATH	N/A
78	AERIAL DEL FACILITY	171A***
79	AERIAL DEL FACILITY	171B***
80	C-17 CARGO COMP TRAIN	189***
81	C-17 TRAINING	172
82	EDUCATION CENTER	155
83	KC-135 CARGO TRAINER	190

Meter Count	Facility Function	Building Number
84	KC-135 FLYING TRAINING	191
85	SAC OPS	193
86	BASE OPERATIONS	185
87	KC-135 AIRCREW TRAINING	179A
88	KC-135 AIRCREW TRAINING	179B
89	COMMUNITY ACT CENTER	148
90	ACADEMIC	87A
91	ACADEMIC	87B
92	443 TTS FSCR	88B
93	SIMULATORS	89B
94	SIMULATORS	89C
95	SAC SIMULATOR	89D
96	SAC SIMULATOR	89E
97	SIMULATORS	89A
98	C-141 SIMULATOR HYDRA	89H
99	C-141 SIMULATOR HYDRA	89F
100	SIMULATORS	88A
101	VOQ	81
102	VOQ	83
103	VOQ	84B
104	LAUNDRY	78
105	VOQ	85
106	VOQ	75
107	VOQ	75
108	VOQ	76***
109	VOQ	79***
110	BILLETING OFFICE	82
111	BILLETING OFFICE	82A
112	POOL	162
113	POOL (PUMP HOUSE)	161
114	BASE GYM	156
115	SAC HQ	72
116	CHILD CARE	65
117	NEW CREDIT UNION	N/A
118	BANK	24
119	NCO CLUB	307
120	NCO POOL (TEMPORARY)	310/306/300
121	POST OFFICE	304
122	BARRACKS	316
123	BARRACKS	315
124	LIBRARY (MWR)	302
125	HQ 97AMW	1
126	CHAPEL	301
127	BOWLING ALLEY (MWR)	106
128	CHAPEL ED CENTER	116A
129	THEATER	114
130	DATA AUTO MACHINE ROOM	218
131	COMMUNICATION FACILITY	215
132	BARRACKS	213
133	DINING HALL	317

Meter Count	Facility Function	Building Number
134	CONTRACTING	318
135	BARRACKS	327
136	BARRACKS	331
137	BARRACKS	333
138	BARRACKS	335
139	FTD	225
140	NEW AGE FACILITY	278
141	443 MAINTENANCE	228
142	CORRISION CONTROL STORAGE	283
143	B284	284A
144	B284	284B
145	HANGAR	285
146	CAR WASH	321
147	BATTERY SHOP	330
148	JET ENGINE SHOP	296
149	CE	357
150	CE	365
151	FIRE STATION #3 (HOUSING)	274
154	GOLF MAINT. FACILITY	546***
155	BASE SUPPLY ADMIN	395***
156	GOQ	1205***

Notes:
**Primary Meter
***Meters require programming, calibration, or repair/replacement (current readings are not accurate)

J1.5.2 Required New Secondary Meters

The Contractor shall install and calibrate new secondary meters as listed in **Table 6**. 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 6
New Secondary Meters
Electric Distribution System - Altus AFB

Facility Function	Facility Number
CORPS OF ENGINEERS	214
LIGHTHOUSE FOR THE BLIND	398
METER FOR MFH BACKFEED	Primary Meter

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 3rd of each month for the previous month. Invoices shall be submitted to:

Name: Clare Lundgren
Address: 97 CES/CEOE
401 L Avenue
Altus AFB, OK 73523
Phone number: (580) 481-7172

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 3rd of each month for the previous month. Outage reports shall be submitted to:

Name: Clare Lundgren
Address: 97 CES/CEOE
401 L Avenue
Altus AFB, OK 73523
Phone number: (580) 481-7172

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 3rd of each month for the previous month. Meter reading reports shall be submitted to:

Name: Clare Lundgren
Address: 97 CES/CEOE
401 L Avenue
Altus AFB, OK 73523
Phone number: (580) 481-7172

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 3rd of each month for the previous month. System efficiency reports shall be submitted to:

Name: Clare Lundgren
Address: 97 CES/CEOE
401 L Avenue
Altus AFB, OK 73523
Phone number: (580) 481-7172

J1.7 Energy Saving Projects

IAW Paragraph C.3, Requirement, there are currently no demand side management (DSM) or energy-saving performance contract (ESPC) arrangements that would have any effect on the electrical distribution system.

J1.8 Service Area

IAW Paragraph C.4, Service Area, the service area is defined as all areas within the Altus AFB boundaries.

J1.9 Off-Installation Sites

No off-Installation sites are included in the sale of the Altus AFB electric distribution system.

J1.10 Specific Transition Requirements

IAW Paragraph C.13, Transition Plan, **Table 7** provides a listing of service connections and disconnections required upon transfer.

TABLE 7
Service Connections and Disconnections
Electric Distribution System - Altus AFB

Location	Description
Building 1866 (Youth Center).	Provide new and separate electrical service to facility 1866 (Youth Center).

J1.11 Government Recognized System Deficiencies

Table 8 provides a listing of system improvements that the Government has planned. The Government recognizes these improvement projects as representing current deficiencies associated with the Altus 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 8
System Deficiencies
Electric Distribution System - Altus AFB

Project Location	Project Description
Installation Switching Station	Work Request #31305, Repair/Replace 5 Reclosers, Base Switching Station
Hangar 285	Project AGGN 001058, Repair/Replace Electrical Service to Nose Dock
Bldg 189	Analyze & Repair System to correct chronic voltage fluctuations.

Primary Distribution	Replace Approximately 3,000′ of primary distribution (Design currently being worked through AFCEE.). Location is roughly in the center of the base, near the control tower.
Substation (North)	Construct new (redundant) substation. Would enable electrical supply from another point on the surrounding power grid in the event of catastrophic loss of the primary substation.