

ATTACHMENT J1

# General Mitchell Field ARS (440<sup>th</sup> AW) Electric Distribution System

## TABLE OF CONTENTS

**GENERAL MITCHELL FIELD ARS (440TH AW) ELECTRIC DISTRIBUTION SYSTEM .....I**

**J1 GENERAL MITCHELL FIELD ARS (440TH AW) ELECTRIC DISTRIBUTION SYSTEM..... 1**

J1.1 GENERAL MITCHELL FIELD ARS (440TH AW) OVERVIEW ..... 1

J1.2 ELECTRIC DISTRIBUTION SYSTEM DESCRIPTION ..... 1

*J1.2.1 Electric Distribution System Fixed Equipment Inventory ..... 1*

        J1.2.1.1 Description..... 2

        J1.2.1.2 Inventory..... 2

*J1.2.2 Electric Distribution System Non-Fixed Equipment and Specialized Tools ..... 5*

*J1.2.3 Electric Distribution System Manuals, Drawings, and Records..... 5*

J1.3 SPECIFIC SERVICE REQUIREMENTS ..... 6

J1.4 CURRENT SERVICE ARRANGEMENT ..... 6

J1.5 SECONDARY METERING ..... 6

*J1.5.1 Existing Secondary Meters..... 6*

*J1.5.2 Required New Secondary Meters..... 7*

J1.6 MONTHLY SUBMITTALS ..... 8

J1.7 ENERGY SAVING PROJECTS ..... 9

J1.8 SERVICE AREA ..... 9

J1.9 OFF-INSTALLATION SITES ..... 10

J1.10 SPECIFIC TRANSITION REQUIREMENTS..... 10

J1.11 GOVERNMENT RECOGNIZED SYSTEM DEFICIENCIES ..... 9

### List of Tables

Fixed Inventory..... 2

Spare Parts ..... 5

Specialized Vehicles and Tools..... 5

Manuals, Drawings, and Records ..... 5

Existing Secondary Meters..... 6

New Secondary Meters ..... 7

Service Connections and Disconnections ..... 10

System Deficiencies ..... 10

# J1 General Mitchell Field ARS (440th AW) Electric Distribution System

---

## J1.1 General Mitchell Field ARS (440th AW) Overview

The Air Force Reserve Station (ARS) at General Mitchell Field is home to the 440<sup>th</sup> Air Force Reserve Airlift Wing (AW). The installation is located about 7 miles south of the center of Milwaukee, and 3 miles west of Lake Michigan. The 440<sup>th</sup> AW's mission is to maintain operational readiness for the airlift of tactical units, airborne units, personnel, supplies and equipment into prepared or unprepared areas by landing or airdrop. The Wing's command is the Air Force Reserve Command and the aircraft currently assigned are C-130H Hercules transports. The resulting economic impact is over \$79.9 million on the surrounding Milwaukee area.

The 440<sup>th</sup> AW encompasses 102 acres of federally owned land in the southwestern portion of the General Mitchell International Airport. Construction of the base began in the 1950's, and has been expanded as the years passed.

The 440<sup>th</sup> AW has a total of 75 buildings, 47 industrial and 28 administrative, on the base totaling 418,000 square feet. There are no living quarters on the base. The 440<sup>th</sup> AW employs 1500 personnel, including 1,100 Reservists and 260 full time civilians. Future growth of the base is expected to be limited in the future with square footage additions generally offset by demolition of existing buildings.

## J1.2 Electric Distribution System Description

### J1.2.1 Electric Distribution System Fixed Equipment Inventory

The General Mitchell Field ARS (440th AW) electric 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 the Right of Way. The system may include, but is not limited to, transformers, circuits, protective devices, utility poles, ductbanks, 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 Contractor 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 are:

- Airfield Lighting
- Ramp Lighting
- Emergency electrical generators
- Security lighting where the light fixture is attached to the building or Parking lot and security lights that are fed directly from buildings

#### J1.2.1.1 Description

We Energies supplies electricity to the 440th AW General Mitchell Air Reserve Station. The 13.2-kilovolt (kV) distribution line enters the base and passes through a We Energies meter and a government owned switchgear and metering cabinet. The primary distribution line leaves the cabinet as an underground circuit that splits into three branches to feed the base. Two of the branches go to a riser pole that feeds the base overhead lines. The third branch remains underground and feeds the buildings on the east side of the base.

Government ownership starts at the demand side of the master meter. From the meter, a combination of two-phase and three-phase overhead/underground circuits serve the Base's facilities. The distribution system contains three-phase transformers ranging from 100 to 1,000 kilovolt amperes (kVA), single-phase transformers ranging from 10 to 100 kVA, switches, fuses, utility poles, and streetlight fixtures.

Construction dates for the underground and overhead circuits and other system components range from the mid-1970s to 2002. The performance of the system suffers from frequent outages due. No known code violations exist.

#### J1.2.1.2 Inventory

**Table 1** provides a general listing of the major electric distribution system fixed assets for the General Mitchell Field ARS (440th AW) electric distribution system included in the sale.

**TABLE 1**  
Fixed Inventory  
*Electric Distribution System General Mitchell Field ARS (440th AW)*

Item	Size	Quantity	Unit	Approximate Year of Construction
<u>Aluminum Wire</u>				
Conductor, 3-ph, 4 w, 1863 LF	#2 Al	7453	SCLF	1995
Conductor, 2-ph, 3 w, 1552 LF	#4 Al	4656	SCLF	1975
Conductor, 3-ph, 4 w, 2450 LF	#4 Al	9800	SCLF	1975
Conductor, 3-ph, 4 w, 2200 LF	#4 Al	8800	SCLF	1958
<u>Copper Wire</u>				
Conductor, 2-ph, 3 w, 644 LF	#4 Cu	1934	SCLF	1995
Conductor, 2-ph, 3 w, 517 LF	#4 Cu	1551	SCLF	1975
Conductor, 3-ph, 4 w, in conduit, 541 LF	#4/0 Cu	2,166	SCLF	1995

Item	Size	Quantity	Unit	Approximate Year of Construction
Conductor, 3-ph, 4 w, in conduit, 10209 LF	#4/0 Cu	40,838	SCLF	1975
<u>Ductbank</u>				
Ductbank, concrete encased	1X1	10,750	LF	1975
<u>Electric Poles</u>				
Wood power pole with light	40'	36	EA	1975
Wood power pole	30'	22	EA	1975
Wood power pole	30'	20	EA	1958
Wood crossarm	6'	22	EA	1975
Wood crossarm	6'	20	EA	1958
Guy, anchor, and hardware	7/1 Steel	14	EA	1975
Guy, anchor, and hardware	7/1 Steel	10	EA	1958
Primary cable terminations and lugs		19	EA	1958
Primary cable terminations and lugs		50	EA	1975
<u>Light Poles</u>				
Galvanized light pole	40'	22	EA	1985
Luminaire, Mercury Vapor	1000W	8	EA	1985
Luminaire, High Pressure Sodium	400W	22	EA	1975
Luminaire, High Pressure Sodium	400W	37	EA	1985
<u>Oil Filled, Pole Mounted Transformers</u>				
1-Phase Transformer	10	3	EA	1975
1-Phase Transformer	25	1	EA	1980
1-Phase Transformer	50	1	EA	2000
1-Phase Transformer	75	1	EA	2000
1-Phase Transformer	100	3	EA	1975
1-Phase Transformer	37	4	EA	1975
1-Phase Transformer	50	3	EA	1975
1-Phase Transformer	67	3	EA	1975
1-Phase Transformer	75	3	EA	1980
1-Phase Transformer	112.5	1	EA	1975
1-Phase Transformer	150	1	EA	1975
<u>Oil Filled, Pole Type Pad Mounted Transformers</u>				
1-Phase Transformer	100	3	EA	1975
1-Phase Transformer	75	3	EA	1975

Item	Size	Quantity	Unit	Approximate Year of Construction
1-Phase Transformer	26.8	1	EA	1975
<u>Oil Filled, Pad Mounted Transformers</u>				
3-Phase Transformer	1,000	1	EA	1975
3-Phase Transformer	100	2	EA	1975
3-Phase Transformer	300	2	EA	1975
1-Phase Transformer	10	1	EA	1975
1-Phase Transformer	26.8	1	EA	1980
1-Phase Transformer	37	1	EA	1975
1-Phase Transformer	50	2	EA	1975
3-Phase Transformer	75	5	EA	1985
3-Phase Transformer	112.5	1	EA	1975
3-Phase Transformer	112.5	1	EA	2000
3-Phase Transformer	225	4	EA	1975
3-Phase Transformer	120/208	1	EA	1975
3-Phase Transformer	500	4	EA	1975
Transformer Pad (4x4) X 29 pads	16.0	464	SF	1975
<u>Lightening Arrestors</u>				
Lightning arrestors		69	EA	1975
<u>Driven Grounds</u>				
Driven Grounds		55	EA	1975
<u>Switches</u>				
Fused cutout		82	EA	1975
Switches, sectionalizing, 3-ph, pole mounted		2	EA	1975
Pad mounted switchgear and meter cabinet		1	EA	1975
<u>Meters</u>				
Meters	120/240V, 125A	10	EA	1975
Meters	120/208V, 125A	7	EA	1985
Meters	120/240V, 125A	2	EA	2002

Notes:

AWG = American Wire Gauge  
EA = each  
LF = linear feet  
Nom kVA = nominal kilovolt-amperes  
ph = phase  
V = volts

Item	Size	Quantity	Unit	Approximate Year of Construction
------	------	----------	------	----------------------------------

w = wire  
 CU = Copper cable  
 Al = Aluminum cable  
 PVC = Poly Vinyl Chloride Pipe  
 Pl = Pole  
 Mntd = Mounted  
 SCLF = Single Conductor Linear Feet

## 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 General Mitchell Field ARS (440th AW)*

Qty	Item	Make/Model	Description	Remarks
None	No spare parts exist to transfer with this system.			

**TABLE 3**  
 Specialized Vehicles and Tools  
*Electric Distribution System General Mitchell Field ARS (440th AW)*

Description	Quantity	Location	Maker
No Vehicles or Tools exist to be transferred with this system.			

## 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 General Mitchell Field ARS (440th AW)*

Qty	Item	Description	Remarks
1	Maps	System plan view drawings.	Maps of installation and utility system will be provided at the time

of the pre-proposal meeting.

---

## J1.3 Specific Service Requirements

The service requirements for the General Mitchell Field ARS (440th AW) electric distribution system are as defined in the Section C, *Description/Specifications/Work Statement*. The following requirements are specific to the 440th AW 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 shall provide monthly meter reading reports in accordance with Paragraph J3.6, and that meet the following requirements:

The Contractor shall keep a meter book with monthly consumption and demand (if applicable) for each meter reading. Meter books shall also include building address or facility number, meter number, previous month readings, current month readings, multipliers for each meter, total monthly consumption, points of contact for meter questions, and procedure for converting meter reads into consumption (including multipliers). The Government may provide a meter reading report format to be used for meter readings.

## J1.4 Current Service Arrangement

We Energies is the electric commodity provider to the 440<sup>th</sup> AW. The electricity used during FY2002 was 6,263,000 kWh. The average monthly amount of electricity used was 526,300 kWh with the maximum occurring in July 2002 with 627,200 kWh and the minimum occurring in October 2001 with 434,200 kWh.

## 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 and J1.6 below.

**TABLE 5**  
Existing Secondary Meters  
*Electric Distribution System General Mitchell Field ARS (440th AW)*

Meter Location	Meter Description
Building 101	Basic Meter, 3 phase 120/208 V, 125A
Building 106	Basic Meter, 3 phase 120/208 V, 125A
Building 111	Basic Meter, 1 phase 120/208 V, 125A

Building 114	Basic Meter, 1 phase 120/208 V, 125A
Building 115	Basic Meter, 1 phase 120/208 V, 125A
Building 117	Basic Meter, 1 phase 120/208 V, 125A
Building 140	Basic Meter, 3 phase 120/208 V, 125A
Building 200	Basic Meter, 3 phase 120/208 V, 125A
Building 207	Basic Meter, 1 phase 120/208 V, 125A
Building 209	Basic Meter, 3 phase 120/208 V, 125A
Building 210	Basic Meter, 1 phase 120/208 V, 125A
Building 220	Basic Meter, 3 phase 120/208 V, 125A
Building 222	Basic Meter, 3 phase 120/208 V, 125A
Building 224	Basic Meter, 1 phase 120/208 V, 125A
Building 300	Basic Meter, 1 phase 120/208 V, 125A
Building 301	Basic Meter, 1 phase 120/208 V, 125A
Building 303	Basic Meter, 1 phase 120/208 V, 125A
Building 305	Basic Meter, 1 phase 120/208 V, 125A
Building 307	Basic 1phase meter, for light industrial building

---

### 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 and J1.6 below.

**TABLE 6**  
New Secondary Meters  
*Electric Distribution System General Mitchell Field (440th AW)*

Meter Location	Meter Description
Building 102	Basic meter, 1phase, 120/240V
Building 103	Basic meter, 3 phase, 120/240V
Building 104	Basic meter, 3 phase, 120/240V
Building 108	Basic meter, 3 phase, 120/240V
Building 109	Basic meter, 3 phase, 120/240V
Building 110	Basic meter, 3 phase, 120/240V
Building 112	Basic meter, 3 phase, 120/240V
Building 113	Basic meter, 3 phase, 120/240V
Building 116	Basic meter, 3 phase, 120/240V

Building 120	Basic meter, 1 phase, 120/240V
Building 121	Basic meter, 3 phase, 120/240V
Building 129	Basic meter, 3 phase, 277/480V
Building 130	Basic meter, 3 phase, 277/480V
Building 131	Basic meter, 3 phase, 277/480V
Building 133	Basic meter, 3 phase, 277/480V
Building 201	Basic meter, 1 phase, 120/240V
Building 202	Basic meter, 1 phase, 120/240V
Building 205	Basic meter, 3 phase, 120/208V
Building 208	Basic meter, 3 phase, 120/208V
Building 212	Basic meter, 3 phase, 277/480V
Building 214	Basic meter, 3 phase, 120/208V
Building 215	Basic meter, 3 phase, 120/208V
Building 217	Basic meter, 3 phase, 277/480V
Building 218	Basic meter, 3 phase, 120/208V
Building 219	Basic meter, 3 phase, 120/208V
Building 225	Basic meter, 3 phase, 120/240V
Building 302	Basic meter, 3 phase, 277/480V
Building 304	Basic meter, 3 phase, 120/208V
Building 308	Basic meter, 3 phase, 120/208V
Building 309	Basic meter, 3 phase, 120/208V
Building 310	Basic meter, 3 phase, 120/208V
Building 311	Basic meter, 3 phase, 120/208V
Building 312	Basic meter, 3 phase, 120/208V
Building 314	Basic meter, 3 phase, 120/208V
Building 317	Basic meter, 3 phase, 120/208V
Building 318	Basic meter, 3 phase, 120/208V
Lift Stations for the wastewater collection system	3 phase meter for medium industrial use appropriate for loads from wastewater pumps

---

The contractor shall provide meters that function properly with the electrical system and meet the standard of code and practice for use in the building setting.

## 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 25<sup>th</sup> of each month for the previous month. Invoices shall be submitted to:

*Name:* Waheed Farooki, 440 MSG /CEC

*Address:* Gen Mitchell ARS , 300 E College Ave, Milwaukee, WI 53207-6299

*Phone number:* (414) 482-5606

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 25<sup>th</sup> of each month for the previous month. Outage reports shall be submitted to:

*Name:* Waheed Farooki, 440 MSG /CEC

*Address:* Gen Mitchell ARS , 300 E College Ave, Milwaukee, WI 53207-6299

*Phone number:* (414) 482-5606

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 15<sup>th</sup> of each month for the previous month. Meter reading reports shall be submitted to:

*Name:* Waheed Farooki, 440 MSG /CEC

*Address:* Gen Mitchell ARS , 300 E College Ave, Milwaukee, WI 53207-6299

*Phone number:* (414) 482-5606

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 25<sup>th</sup> of each month for the previous month. System efficiency reports shall be submitted to:

*Name:* Waheed Farooki, 440 MSG /CEC

*Address:* Gen Mitchell ARS, 300 E College Ave, Milwaukee, WI 53207-6299

*Phone number:* (414) 482-5606

## J1.7 Energy Saving Projects

IAW Paragraph C.3, Requirement, the following projects have been implemented on the distribution system by the Government for energy conservation purposes.

- No energy saving projects have been implemented.

## J1.8 Service Area

IAW Paragraph C.4, Service Area, the service area is defined as all areas within the General Mitchell Field ARS (440th AW) boundaries.

## J1.9 Off-Installation Sites

No off-installation sites are included in the sale of the General Mitchell Field ARS (440th AW) 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 General Mitchell Field ARS (440th AW)*

Location	Description
None	No new service connections or disconnects will be required as a result of privatization.

## 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 General Mitchell Field ARS (440th AW) 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 General Mitchell Field ARS (440th AW)*

Project Location	Project Description
Entire Electrical System	The current OH system has experienced numerous outages. Several of the wooden poles are expected to cause problems in the future. A comprehensive load flow study showing the current carrying capacity of each building should be performed. The results of the study should be used as the basis for projects to upgrade the electrical system and improve the system performance.