

## Attachment J01

# Fort Leavenworth Electric Distribution System

---

## Table of Contents

J01.1 Fort Leavenworth Area Overview.....	J01-1
J01.2 Electric Distribution System Description .....	J01-1
J01.3 Current Service Arrangement .....	J01-8
J01.4 Secondary Metering .....	J01-8
J01.5 Monthly Submittals .....	J01-9
J01.6 Energy Savings Projects.....	J01-10
J01.7 Service Area.....	J01-10
J01.8 Off-Installation Sites .....	J01-10
J01.9 Specific Transition Requirements.....	J01-10
J01.10 Electric Distribution System Points of Demarcation .....	J01-10
J01.11 Plants and Substations .....	J01-12

## List of Tables

1	Fixed Inventory Electric Distribution System – Fort Leavenworth.....	J01-3
2	Spare Parts Electric Distribution System – Fort Leavenworth.....	J01-7
3	Specialized Equipment and Vehicles Electric Distribution System – Fort Leavenworth .....	J01-7
4	Manuals, Drawings, and Records Electric Distribution System - Fort Leavenworth.....	J01-8
5	Existing Secondary Meters Electric Distribution System – Fort Leavenworth.....	J01-8
6	New Secondary Meters Electric Distribution System – Fort Leavenworth.....	J01-9
7	Service Connections and Disconnections Electrical Distribution System – Fort Leavenworth.....	J01-10
8	System Improvement Projects Electrical Distribution System – Fort Leavenworth.....	J01-10
9	Points of Demarcation Electrical Distribution System – Fort Leavenworth.....	J01-11
10	Unique Points of Demarcation Electrical Distribution System – Fort Leavenworth.....	J01-12
11	Plants and Substations Electrical Distribution System – Fort Leavenworth.....	J01-13

# J01 Fort Leavenworth Electric Distribution System

---

## J01.1 Fort Leavenworth Area Overview

Fort Leavenworth is home to the U.S. Army's Command and General Staff College, the U.S. Army Combined Arms Command, and the U.S. Disciplinary Barracks. Founded in 1827 by Col. Henry Leavenworth for whom it is named, Fort Leavenworth has been witness to much of the history of the American West. The Post is situated approximately 35 miles northwest of Kansas City, Missouri. Fort Leavenworth is a completely self-contained military post. It has 1,586 units of family housing and twelve guesthouse units. The Post has three elementary schools and one junior high school as well as daycare and preschool programs. There is a twenty-five-bed hospital, an eighteen-hole golf course, swimming pools and many other sports and shopping venues on the Post.

## J01.2 Electric Distribution System Description

### J01.2.1 Electric Distribution System Fixed Equipment Inventory

The Fort Leavenworth 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/or Government ownership currently starts, to the point of demarcation defined by the real estate instruments. Generally, the point of demarcation will be the building footprint. The system may include, but is not limited to, substations, transformers, underground and overhead circuits, utility poles, switches, vaults, and lighting fixtures. The following description and inventory is included to provide the Offeror with a general understanding of the size and configuration of the distribution system. The inventory is assumed to be approximately 90 percent complete. The Offeror shall base the proposal on site inspections, information in the bidders library, other pertinent information, and to a lesser degree the following description. Under no circumstances shall the successful Contractor be entitled to any rate adjustments based on the accuracy of the following description and inventory.

#### J01.2.1.1 Description

Fort Leavenworth owns and operates an electric utility system consisting of:

1. Three distribution substations:
  - a. Substation No. 3 has two 15 MVA, LTC, 33 to 12.47/7.2 kV transformers; two 1200 Amp main breakers; one 1200 Amp tie breaker; and eight 1200 Amp feeder breakers.
  - b. Substation No. 4 has one 7.5/10.5 MVA, 33 to 12.47/7.2 kV transformer; one 1200 Amp main breaker; one 1200 Amp feeder breaker; and one 1200 Amp spare breaker.
  - c. Substation No. 5 has one 7.5 MVA, LTC, 33 to 12.47/7.2 kV transformer and six 1200 Amp feeder breakers.
2. The 15-kV bus is designed as a radial feeder scheme.

3. Fifteen distribution feeders supply 12.47/7.2 kV primary voltage to loads throughout the Post. The existing facilities are divided approximately evenly between overhead and underground construction. The larger portion of the family housing areas and schools has been constructed with underground facilities, as have feeders in and around the airfields and in the active portions of the range areas. New facilities will be placed underground where practical. Underground facilities comprise a mix of direct-buried facilities, duct-and-manhole construction, and cable in conduits. Most of the three-phase feeders are tied together by air-break, gang-operated switches. Protection from faults and lightning is provided by fused cutouts and by lightning arrestors. The overhead distribution system is about evenly divided between lines built before 1996 and lines built or rebuilt in 1974 or 1983, with some of the larger conductor lines reconstructed in 1990 or later. Current planned projects include the replacement of the switchgear at Substation No. 3 and replacement of some overhead lines with underground construction. A new PX building is under construction and will require new underground service from existing facilities. The Commissary building has recently undergone renovation. There will be no major impact from this project on the existing system.

There are approximately 84 miles of overhead lines and 57 miles of underground transmission lines including ducts and conduits. Installation maps and records shown 264 pole-type transformers and 259 pad-mounted transformers throughout the Installation. There are approximately 1,192 fixtures and poles, and 1,664 services.

The switchgear at Substation No. 3 is outdoor-type of 1961 or earlier vintage. Although the equipment is adequate for the duty imposed, parts are difficult to obtain and maintenance should occur more frequently. The Post presently plans to replace the existing gear with enclosed switchgear similar to that installed at Substation No. 4. This is considered to be an upgrade rather than a required system improvement.

Constant expansion of the General Command School at Fort Leavenworth requires the relocation and/or replacement of existing facilities. In FY96, approximately \$300,000 was budgeted to relocate and replace existing overhead facilities with underground electric facilities. A total of \$1.3 million in additions and system improvements is planned.

## J01.2.1.2 Inventory

**Table 1** provides a general listing of the major electric system fixed assets for the Fort Leavenworth electric distribution system. The system will be sold in an “as is, where is” condition without any warrant, representation, or obligation on the part of the Government to make any alterations, repairs, or improvements. All ancillary equipment attached to and necessary for operating the system, though not specifically mentioned here in, is considered part of the purchased utility.

Table 1  
Fixed Inventory  
Electric Distribution System – Fort Leavenworth

Item	Quantity	Unit	Approximate Year of Construction
<b>Switching Station No. 1</b>			
S&C Switch Gear	2	Ea	1961
S&C S Switch Gear	1	Ea	1989
Building	1	Ea	1955
Miscellaneous	1	Ea	1972
<b>Switching Station No. 2</b>			
Switch gear, 15 KV	2	Ea	1983
<b>Switching Station No. 3</b>			
Switchgear, 15 kV	2	Ea	1961
Caps., 450 KVAR, PadMt.	2	Ea	1994
<b>Substation No. 3</b>			
HV Steel	1	Ea	1960
LV Steel	1	Ea	1960
Buswork	1	Ea	1985
ABS, 35 kV	2	Ea	1961
ABS, 35 kV	3	Ea	1991
OCB, 15 kV, 1200 A	6	Ea	1958
OCB, 15 kV, 1200 A	4	Ea	1961
Fuses, 35 kV	6	Ea	1991
Fuses, 35 kV	1	Ea	1986
Transf, 3-Ph, 7.5/10.5 MVA	1	Ea	1991
Transf, 3-Ph, 7.5/10.5 MVA	1	Ea	1992
Concrete	1	Ea	1960
Site Work	1	Ea	1960
Fence	400	Ft	1960
Grounding	1	Ea	1991
Mis cellaneous	1	Ea	1960
<b>Substation No. 4</b>			
HV Steel	1	Ea	1993
HV Steel	1	Ea	1993
Buswork	1	Ea	1993
ABS, 35 kV	1	Ea	1993
Fuses, 35 kV	3	Ea	1993
VacCB, 15 kV, W	3	Ea	1993
Transf, 3-Ph, 7.5/10.5 MVA	1	Ea	1993

Item	Quantity	Unit	Approximate Year of Construction
VR, 1Ph, 667kVA, 19.92kV	3	Ea	1993
Walk-in Swgr, 15 kV	1	Ea	1993
Concrete	1	Ea	1993
Site Work	1	Ea	1993
Fence	400	Ft	1993
Grounding	1	Ea	1993
Miscellaneous	1	Ea	1993
<b>Substation No. 5</b>			
HV Steel	1	Ea	1975
LV Steel	1	Ea	1975
Buswork	1	Ea	1975
Fuses, 35 kV	3	Ea	1975
ACB, 15 kV, 1200 A	4	Ea	1975
ACB, 15 kV, 1200 A	1	Ea	1987
Transf, 3-PH, 7.5 MVA, LTC	1	Ea	1975
Concrete	1	Ea	1975
Site Work	1	Ea	1975
Fence	400	Ft	1975
Grounding	1	Ea	1975
Capacitor, 3450 KVAR, PadMt.	3	Ea	1994
Miscellaneous	1	Ea	1975
<b>Overhead Distribution Lines</b>			
HDBC 6	15,835	Linear Ft.	1983
#4 HDBC	40,800	Linear Ft.	1967
#4 HDBC	53,610	Linear Ft.	1974
#4 HDBC	28,690	Linear Ft.	1983
#2, HDBC	1,920	Linear Ft.	1967
#2, HDBC	5,725	Linear Ft.	1974
#2, HDBC	8,820	Linear Ft.	1983
1/0 Cu	58,560	Linear Ft.	1967
1/0 Cu	47,420	Linear Ft.	1974
1/0 Cu	20,020	Linear Ft.	1983
2/0 HDBC	2,300	Linear Ft.	1983
3/0 HDBC	1,400	Linear Ft.	1983
4/0 HDBC	7,200	Linear Ft.	1974
ACSR 2	20,740	Linear Ft.	1967
ACSR 2	3,960	Linear Ft.	1974
ACSR 1/0	6,360	Linear Ft.	1974
4/0 ACSR	21,400	Linear Ft.	1974
4/0 ACSR	60,680	Linear Ft.	1981
4/0 ACSR	12,160	Linear Ft.	1983
4/0 ACSR	24,380	Linear Ft.	1991
Subtotal Overhead Lines	<b>441,980</b>		
<b>Underground Distribution Lines</b>			
2 AL, DB	2,680	Linear Ft.	1983
2 AL, DB	2,715	Linear Ft.	1994
#2 Al	820	Linear Ft.	1983
6 Cu	2,150	Linear Ft.	1967

Item	Quantity	Unit	Approximate Year of Construction
4 Cu, 15 kV	1,230	Linear Ft.	1985
2 Cu, 15 kV	5,930	Linear Ft.	1974
2 Cu, 15 kV	51,920	Linear Ft.	1983
2 Cu, 15 kV	6,780	Linear Ft.	1985
2 Cu, 15 kV	2,435	Linear Ft.	1989
2 CU, 3-C, 15	1,065	Linear Ft.	1974
1 Cu, 15 kV	6,880	Linear Ft.	1983
1/0 Cu, 15 kV	5,665	Linear Ft.	1983
2/0 Cu, 15 kV	24,660	Linear Ft.	1974
2/0 Cu, 15 kV	4,560	Linear Ft.	1981
2/0 Cu, 15 kV	22,750	Linear Ft.	1983
2/0 Cu, 15 kV	33,105	Linear Ft.	1989
2/0 Cu, 15 kV	22,000	Linear Ft.	1994
2/0, 3-C, PIL	4,250	Linear Ft.	1957
4/0 Cu, PILC	2,520	Linear Ft.	1961
4/0 Cu Okoni	43,640	Linear Ft.	1983
250 kcmil, 15	13,740	Linear Ft.	1983
350 kcmil Cu	5,120	Linear Ft.	1983
350 kcmil Cu	13,240	Linear Ft.	1994
350 kcmil Cu	1,000	Linear Ft.	1995
400 kcmil Cu	15,840	Linear Ft.	1951
500 kcmil C	1,260	Linear Ft.	1991
500 kcmil C	450	Linear Ft.	1983
<b>Subtotal Underground Lines</b>	<b>298,405</b>		
<b>Pole Mounted Transformers</b>			
<10 kVA	4	Ea	1974
<10 kVA	4	Ea	1983
10 kVA	12	Ea	1974
10 kVA	1	Ea	1981
10 kVA	3	Ea	1983
15 kVA	18	Ea	1974
15 kVA	1	Ea	1983
25 kVA	5	Ea	1967
25 kVA	20	Ea	1974
25 kVA	13	Ea	1983
37.5 kVA	11	Ea	1970
37.5 kVA	21	Ea	1974
37.5 kVA	23	Ea	1983
50 kVA	23	Ea	1970
50 kVA	20	Ea	1974
50 kVA	13	Ea	1983
75 kVA	20	Ea	1967
75 kVA	7	Ea	1974
75 kVA	12	Ea	1983
100 kVA	19	Ea	1967
100 kVA	1	Ea	1974
100 kVA	10	Ea	1983
167 kVA	3	Ea	1967
<b>Subtotal Pole Mounted Transformers</b>	<b>264</b>		

Item	Quantity	Unit	Approximate Year of Construction
<b>Pad Mounted Transformers 1-Ph</b>			
15 kVA	8	Ea	1983
25 kVA	12	Ea	1983
37.5 kVA	15	Ea	1983
37.5 kVA	11	Ea	1994
50 kVA	2	Ea	1967
50 kVA	15	Ea	1983
50 kVA	2	Ea	1985
50 kVA	17	Ea	1989
75 kVA	5	Ea	1967
75 kVA	18	Ea	1983
75 kVA	5	Ea	1985
75 kVA	35	Ea	1991
75 kVA	13	Ea	1989
100 kVA	17	Ea	1974
100 kVA	8	Ea	1983
100 kVA	3	Ea	1989
100 kVA	10	Ea	1993
167 kVA	4	Ea	1974
167 kVA	1	Ea	1983
250 kVA	4	Ea	1983
333 kVA	4	Ea	1974
<b>Pad Mounted Transformers 3-Ph</b>			
45 kVA	2	Ea	1983
75 kVA	1	Ea	1974
75 kVA	5	Ea	1983
112.5 kVA	1	Ea	1974
112.5 kVA	3	Ea	1983
150 kVA	4	Ea	1983
150 kVA	1	Ea	1989
150 kVA	1	Ea	1994
225 kVA	4	Ea	1983
225 kVA	1	Ea	1994
225 kVA	1	Ea	1989
300 kVA	4	Ea	1983
500 kVA	8	Ea	1983
500 kVA	3	Ea	1985
500 kVA	3	Ea	1993
750 kVA	5	Ea	1983
750 kVA	2	Ea	1995
1500 kVA	1	Ea	1983
Subtotal Pad Mount Transformers 1-ph and 3-Ph	<b>259</b>		
Total Transformers	<b>523</b>		
<b>Street Lights</b>			
Poles & Fixtures	716		1962
Poles & Fixtures	286		1683
Poles & Fixtures	190		1993
Subtotal Street Lights	<b>1,192</b>		
Services Overhead			

Item	Quantity	Unit	Approximate Year of Construction
	352		1960
	176		1975
	100		1983
	50		1985
<b>Subtotal Overhead Services</b>	<b>678</b>		
Services Underground			
	295		1974
	295		1983
	296		1992
	100		1994
<b>Subtotal Underground Services</b>	<b>986</b>		

### J01.2.2 Electrical Distribution System Non-Fixed Equipment and Specialized Tools Inventory

**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 and tools prior to submitting a bid. Offerors shall make their own determination of the adequacy of all equipment and tools. The successful Contractor shall provide any and all equipment, vehicles, and tools, whether included in the purchase or not, to maintain a fully operating system under the terms of this contract.

Table 2  
Spare Parts  
Electric Distribution System – Fort Leavenworth

Qty	Item	Make/Model	Description	Remarks
	None Identified			

Table 3  
Specialized Equipment and Vehicles  
Electric Distribution System – Fort Leavenworth

Description	Quantity	Location	Maker
None Identified			

### J01.2.3 Electric System Manuals, Drawings, and Records Inventory

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

Table 4  
Manuals, Drawings, and Records  
Electric Distribution System - Fort Leavenworth

Qty	Item	Description	Remarks
	Electric Distribution Drawings	Layout of electric distribution system	May not have all drawings available

## J01.3 Current Service Arrangement

Currently, Fort Leavenworth purchases wholesale electric power from Kansas Power & Light Division of Western Resources, Inc. (KPL). Power is delivered from KPL’s 34.5-kV subtransmission system at a KPL metering point west of the West Gate of the Installation. A second, standby delivery point is located near the Main Gate of the Installation. All electric facilities located on the Installation are owned and operated by Fort Leavenworth.

As required by this contract, the Contractor shall demonstrate the ability to meet and shall establish any and all requirements to provide electric distribution service to Fort Leavenworth.

## J01.4 Secondary Metering

The Installation may require secondary meters for internal billings of their reimbursable customers, utility usage management, and energy conservation monitoring. The Contractor shall assume full ownership and responsibility for existing and future secondary meters IAW Clause C.3.

### J01.4.1 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 once a month for all secondary meters IAW C.3 and J01.5 below.

Table 5  
Existing Secondary Meters  
Electric Distribution System – Fort Leavenworth

Meter Location	Meter Description
None identified	

## J01.4.2 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 Clause C.13, Operational Transition Plan. After installation, the Contractor shall maintain and read these meters IAW Clauses C.3 and J01.5 below.

Table 6  
 New Secondary Meters  
 Electric Distribution System – Fort Leavenworth

Meter Location	Meter Description
None Identified	

## J01.5 Monthly Submittals

The Contractor shall provide the Government monthly submittals for the following: 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 the Contracting Officer’s designee. (This information will be provided upon award)

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 include the following information for Scheduled and Unscheduled outages:

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

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

Outage reports shall be submitted by the 25<sup>th</sup> of each month for the previous month. Outage reports shall be submitted to the Contracting Officer’s designee. (This information will be provided upon award)

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 the Contracting Officer’s designee. (This information will be provided upon award)

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 the Contracting Officer’s designee. (This information will be provided upon award)

## J01.6 Energy Savings Projects

IAW C.3, Utility Service Requirement. The following projects have been implemented by the Government for managing and monitoring I&I:

- None

## J01.7 Service Area

IAW Clause C.4, Service Area. The service area is defined as all areas within the Fort Leavenworth Area boundaries.

## J01.8 Off-Installation Sites

There are no off-installation sites associated with this scope.

## J01.9 Specific Transition Requirements

IAW Clause C.13, Operational Transition Plan. **Table 7** lists service connections and disconnections required upon transfer, and **Table 8** lists the improvement projects required upon transfer of the Fort Leavenworth electric distribution system.

Table 7  
Service Connections and Disconnections  
Electrical Distribution System – Fort Leavenworth

Location	Description
None Identified	

Table 8  
System Improvement Projects  
Electrical Distribution System – Fort Leavenworth

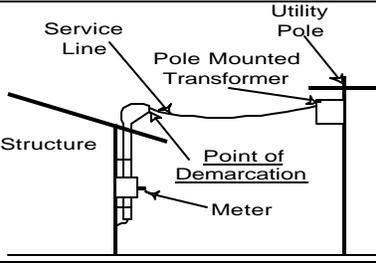
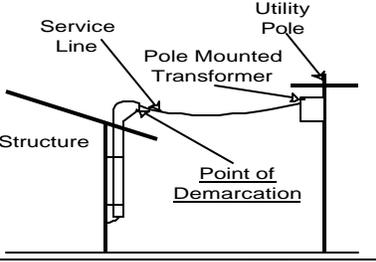
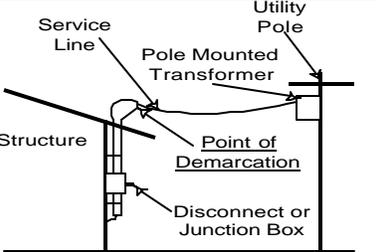
Location	Description
None Identified	

## J01.10 Electric Distribution System Points of Demarcation

The point of demarcation is defined as the point on the distribution system where ownership changes from the Grantee to the building owner. This point of demarcation will typically be at the point the utility enters a building structure or the load side of a transformer within a building structure. The table below identifies the type and general location of the point of demarcation with respect to the building for each scenario.

Table 9  
Points of Demarcation  
Electrical Distribution System – Fort Leavenworth

Point of Demarcation	Applicable Scenario	Sketch
Point of demarcation is the transformer secondary terminal spade.	Pad Mounted Transformer located outside of structure with underground service to the structure and no meter exists.	
Down current side of the meter	Residential service (less than 200 amps and 240V 1-Phase), and three phase self contained meter installations. Electric Meter exists within five feet of the exterior of the building on an underground secondary line.	
Point of demarcation is the transformer secondary terminal spade.	Three Phase CT metered service.	
Secondary terminal of the transformer inside of the structure	Transformer located inside of structure and an isolation device is in place with or without a meter  Note: Utility Owner must be granted 24-hour access to transformer room.	
Secondary terminal of the transformer inside of the structure	Transformer located inside of structure with no isolation device in place.  Note: Utility Owner must be granted 24-hour access to transformer room.	

Point of Demarcation	Applicable Scenario	Sketch
Point of demarcation is the point where the overhead conductor is connected to the weatherhead.	Electric meter is connected to the exterior of the building on an overhead secondary line.	
Point of demarcation is the point where the overhead conductor is connected to the weatherhead.	Pole Mounted Transformer located outside of structure with secondary attached to outside of structure with no meter.	
Point of demarcation is the point where the overhead conductor is connected to the weatherhead.	Service may be overhead or underground. A disconnect switch or junction box is mounted to the exterior of the structure with no meter.	

### J01.10.1 Unique Points of Demarcation

The following table lists anomalous points of demarcation that do not fit any of the above scenarios.

Table 10  
Unique Points of Demarcation  
Electrical Distribution System – Fort Leavenworth

Building No.	Point of Demarcation Description
None	None

### J01.11 Plants and Substations

The following table lists plants and substations that will be transferred as part of the utilities privatization effort.

Table 11  
Plants and Substations  
Electrical Distribution System – Fort Leavenworth

Description	Facility #	State Coordinates	Other Information
None			