

TRANSMISSION POWER (KWH) USAGE  
ESTIMATING MONTHLY ELECTRIC BILLS IN EQUIPMENT BUILDINGS

1. GENERAL

1.01 This section provides an approved method of estimating an approximate split of a total electric consumption between house service and transmission power.

1.02 This section is being revised to introduce the new procedure used to calculate the estimated transmission power.

2. TELEPHONE POWER

2.01 For the purpose of this section, transmission power includes all telephone equipment usage within a building, usually the DC power plant plus any special telephone equipment. The remainder of the electricity consumed in a building is combined house service power used for air conditioning, lighting, air handling units (fans), pumps, etc.

2.02 Transmission power is normally not separately metered by Southwestern Bell or the utility company. One meter is usually installed which records Kilowatt hour (KWH) usage for the entire building.

2.03 The ratio of actual power consumed by telephone equipment and for other building systems varies from one location to the other. A small equipment building, may have a larger percentage of telephone power while a large equipment building with lots of office space included, such as a division office building, may have a lower percentage of telephone power.

2.04 All electrical power in Group 7 and Group 8 buildings where no forces are located should be treated in its entirety to the provision of transmission power.

2.05 All telephone buildings other than mentioned in paragraph 2.04, that house telephone equipment, must have electric bills split between transmission power and house service power for three basic purposes.

(a) Energy Reporting

For reporting the company's energy consumption in Energy I & II systems, it is essential to identify separate energy consumption in KWH for house service and transmission power.

(b) Proper Accounting for Electric Bills

Per the Accounting Handbook - Telephone Plant, Section V27.503, the dollar amount shown for bill payment of an electric bill must be split between routine house service power and non-routine direct power. Routine house service power is distributed to each user group on a basis of the floor space occupied. Non-routine direct power (transmission power) is charged directly to the user group involved (Network).

(c) Sales Tax on Electric Bills

Certain states may require a declaration of what percent of monthly usage is consumed by the telephone equipment in an equipment building. Some states may not levy tax on the portion of power used by our equipment to transmit messages.

2.06 Building operations group who is in charge of paying utility bills should obtain an annual power drain study for all equipment buildings from their local power engineer (Form SW6623 - Exhibit 1).

2.07 Network Operations group prepares this annual power drain study in accordance with Section 157-601-902SW.

3. BUSY HOUR AND IDLE HOUR 48V READING PROCEDURE

3.01 A copy of the 24-hour power drain records on Form SW6623 (Section 157-601-902SW) with a notation of a busy hour and an idle hour should be forwarded to the building operations group by the Network Operations (Power Engineer) group for all buildings housing telephone equipment. A separate SW6623 for each power plant should be prepared.

3.02 Busy hour and idle hour amperes readings are recorded for the same 24-hour period once a year on the power plant drain record. Busy hour indicates the highest average current over a one-hour period between the hours 8 a.m. to 12 p.m. The idle hour indicates the lowest one-hour average current readings between the hours 1 a.m. to 7 p.m. on the same study.

4. CALCULATION OF ESTIMATED TRANSMISSION POWER

4.01 Form SW-1750 (Exhibit 2) will be used to calculate the estimated transmission power.

4.02 Persons calculating transmission power should first obtain an annual power drain study (Form SW6623) for each power plant as mentioned in paragraph 3.01. Appropriate amperes data for busy hour and idle hour from this power drain study should

be entered in column "MEASURED AMPERES" on Form SW-1750. Multiplying this amperes with factors shown under "FACTOR" column will give KWH/month consumption for that power plant which is recorded in the last column.

4.03 All 48V power plants serving electro-mechanical switching systems will have different busy hour and idle hour ampere numbers in their annual power drain (SW6623). This data should be entered on Line A of Form SW-1750.

4.04 All power plants, other than mentioned in paragraph 4.03, serve a constant load (ESS machines, 130V and 140V plants). Hence, their busy and idle hour reading is the same. Only one reading is required on these plants and entered on Line B of Form SW-1750.

4.05 All other telephone operations support systems and AC operated telephone loads should be calculated separately (Ampere x Voltage x Usage factor x 720 hrs./month ÷ 1000). This KWH/month should be entered on Line C of Form SW-1750.

4.06 Line D of Form SW-1750 is a summation of Lines A, B and C and represents the estimated total transmission power for the month.

4.07 On Line E of Form SW-1750, the average monthly KWH data from utility electric bills should be entered. This can be obtained by adding the KWH from electric bills for the last 12 months and dividing the total by 12.

4.08 Lines F and G of Form SW-1750 indicate the percentage of transmission power and house service power. These percentages should be used to split energy usage (KWH) and cost (dollars) for the utility payments on FA Form SW4472.

4.09 Form SW-1750 is prepared annually, except as noted in paragraph 4.10, for all locations where split between transmission power and house service power is necessary (paragraph 2.05) and the same percentages shown on Lines F and G should be used every month during the entire year for electricity bill payment.

4.10 If there is a building addition or a major change in telephone equipment power requirements, a new percentage should be calculated as outlined in paragraphs 4.01 through 4.08.

4.11 The Building Operations Control Center (BOCC) or the building operations office should keep on file a copy of Form SW-1750 for all locations mentioned in paragraph 2.05.

EXHIBIT 1

DC POWER DRAIN DATA



FORM SW6623  
(Rev. 7-80)

157-601-902SW

Retain 1 Year, until \_\_\_\_\_

**DC POWER DRAIN DATA**

DIVISION \_\_\_\_\_ DISTRICT \_\_\_\_\_  
 CITY/TOWN \_\_\_\_\_ OFFICE \_\_\_\_\_  
 POWER PLANT CODE \_\_\_\_\_ VOLTAGE \_\_\_\_\_  
 NUMBER OF CELLS PER BATTERY STRING \_\_\_\_\_ STRINGS \_\_\_\_\_ KS \_\_\_\_\_ LIST \_\_\_\_\_  
 CHARGE CAPACITY (INCL. RESERVE) \_\_\_\_\_ AMPERES \_\_\_\_\_  
 DATE: \_\_\_\_\_ FROM \_\_\_\_\_ TO \_\_\_\_\_

DC DISCHARGE CURRENT IN AMPERES					DC DISCHARGE CURRENT IN AMPERES				
TIME	LOAD A	LOAD B	LOAD C	TOTAL	TIME	LOAD A	LOAD B	LOAD C	TOTAL
8:00 AM					8:00 PM				
9:00 AM					9:00 PM				
10:00 AM					10:00 PM				
11:00 AM					11:00 PM				
12:00					12:00				
1:00 PM					1:00 AM				
2:00 PM					2:00 AM				
3:00 PM					3:00 AM				
4:00 PM					4:00 AM				
5:00 PM					5:00 AM				
6:00 PM					6:00 AM				
7:00 PM					7:00 AM				

SPARE EQUIPMENT: \_\_\_\_\_

PREPARED BY \_\_\_\_\_

TELEPHONE \_\_\_\_\_

**DISTRIBUTION:**

- Retain 1 copy for District File
- 1 copy to Division Manager
- 1 copy to General Manager
- 1 copy to Building Operations

EXHIBIT 2

CALCULATION OF ESTIMATED TRANSMISSION POWER



Form SW-1750  
(Rev. 6-82)

770-120-905SW

Retain 3 Years, until \_\_\_\_\_

CALCULATION OF ESTIMATED TRANSMISSION POWER

Date \_\_\_\_\_

Bldg. Name \_\_\_\_\_

Address \_\_\_\_\_

Location Code \_\_\_\_\_

Enter Ampere data for all power plants, i.e., 48V, 24V, 130V, etc. from SW-6623. (See Sec. 4 of BSP 770-120-905SW for more information.)

A. 48V Plants Serving Switching Systems

	MEASURED AMPERES		FACTOR		KWH/MONTH
Busy Hour	_____	X	19	=	_____
Idle Hour	_____	X	27	=	_____

B. Plants Serving Constant Loads

CELLS IN MAIN BATTERY STRING	MEASURED AMPERES		FACTOR		KWH/MONTH
70 (140V)	_____	X	122	=	_____
66 (130V)	_____	X	125	=	_____
63 (130V)	_____	X	119	=	_____
61 (130V)	_____	X	106	=	_____
23 ( 48V)	_____	X	44	=	_____
12 ( 24V)	_____	X	23	=	_____
11 ( 24V)	_____	X	22	=	_____

C. Operations Support Systems & AC Operated Tel. Loads

KWH/MONTH

\_\_\_\_\_  
\_\_\_\_\_

D. Total Estimated Transmission Power (A + B + C) =

\_\_\_\_\_ KWH/MONTH

E. Average Monthly KWH For Entire Building (Total of last 12 month's Electric Bill KWH ÷ 12)

\_\_\_\_\_

F. Percentage of Transmission Power =  $\frac{\text{Tel. Power KWH}}{\text{Total Average KWH}} \times 100 \text{ Percent}$

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G. Percentage of other house service power = (100% - % of Transmission Power (Line F))

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