



Transmission Related Station Power Use at Substations

BUSINESS PRACTICE

This Business Practice identifies the cost responsibility for energy consumption at substations by American Transmission Company LLC (ATC). ATC will require electric service installations¹ (alternating current (AC) station power) to transmission facilities and will consume electrical energy to serve transmission specific related equipment located within substations interconnected to the ATC transmission system. Equipment examples are as follows: battery chargers, circuit breakers, transformer auxiliary power and instrument transformers. Energy consumed for lighting, HVAC, and shared DC panels at Local Distribution Company (LDC) owned / ATC occupied control houses is the responsibility of the LDC. The energy consumed by ATC is necessary to serve the operational and reliability needs of the LDC(s) at any given substation and the cost of the energy consumed by ATC will be the financial responsibility of ATC. This Business Practice applies to all existing substations where ATC facilities are present, ATC-Only substations, switchyards, terminals, pumping stations, cathodic protection systems, and any newly constructed substations where ATC facilities are present, unless otherwise agreed to by ATC and the LDC.

SCOPE AND APPLICABILITY

This Business Practice is applicable to all substations in which ATC owns energy consuming equipment that has its source from “inside the fence”.

For new substation construction, a separate AC load center will be installed and metered to provide power to ATC equipment. In the case of significant renovation to an existing substation, ATC and the LDC will enter into the Best Value Planning (BVP) process to determine whether it is appropriate to install and meter a separate load center for ATC equipment. When the BVP process determines that it is appropriate to install a separate load center and associated electrical circuits required to serve the ATC load, ATC will be responsible for the installation cost of those facilities.

¹ AC Station Power shall be provided consistent with the latest version of the ATC Substation Design Criteria DS000 which is available upon request.

In the case of existing substations, (without AC panel metering) ATC's energy use will be estimated. (See Appendix B for an example of energy use estimation methods).

If the source of station power for transmission related equipment originates from the distribution system outside of the substation, ATC will pay for the energy consumed (See Appendix A for a listing of different station power sources and a description of the cost responsibility for the energy consumed.) If there are instances where metering is not in place and is not feasible, ATC's energy consumption will be estimated using the same estimating method used for power derived within the substation. See Appendix B for examples of the energy consumption estimates for various substation equipment.

The default electric service rate to be charged under this Business Practice will be the appropriate LDC small commercial, energy-only, non-time-of-use electric service rate, as agreed upon by the LDC and ATC. For substations interconnecting legacy (i.e. pre-ATC) generation resources to the ATC transmission system, the electric service rate to be used is to be jointly determined by both ATC and the LDC in accordance with the Generation – Transmission Interconnection Agreement between the parties.

If more accurate usage information becomes available for the various substation equipment where electrical usage is estimated, this information will be used to estimate bills moving forward. Previously issued bills will not be adjusted to reflect this new information. In addition, the ATC owned equipment list at estimated substations will be reviewed by ATC on an annual basis, and any changes will be communicated to the appropriate LDC. If any changes have occurred, estimated bills will be modified accordingly.

The invoicing for station power usage will be through the LDC's electric service billing system, unless otherwise agreed to by ATC and the LDC.

SUPPORTING INFORMATION

Each LDC will be responsible for cooperating with ATC to provide station power to ATC’s transmission related equipment in the substations where they co-exist. In the event that more than one LDC is present in any given substation, ATC and the associated LDCs will agree on:

- which LDC provides the station power,
- the appropriate billing and billing methods for the electric energy consumed by ATC.

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TITLE:	<i>Transmission Related Station Power Use At Substations</i> <i>Approved by: Tom Finco – Director External Relations</i>	Page 3 of 5 <i>Tom Finco</i>

Revision Information

<i>Version</i>	<i>Author</i>	<i>Date</i>	<i>Section</i>	<i>Description</i>
0.0	Mike Burow	11-01-2010	All	New

Appendix A – Energy Cost Responsibility Associated with Various Energy Sources					
SCENARIO	#1	#2	#3	#4	#5
	Station Power source supplied from transmission bus (from any device deriving power from the transmission bus, such as power transformer tertiary or power potential transformer)	Station Power source supplied from distribution bus internal to substation	Station Power source supplied from distribution source external to substation	LDC installs new station power at request of ATC for transmission use	LDC increases station power capacity at the request of ATC
Metered	ATC will be billed for actual energy consumed	ATC will be billed for actual energy consumed	ATC will be billed for actual energy consumed	ATC pays for the cost of installation according to LDC business practices, and is billed for actual energy consumed	ATC pays for the cost of the capacity increase / upgrade according to LDC business practices, and is billed for actual energy consumed
Un-Metered	ATC will be billed for energy consumed, based on estimate	ATC will be billed for energy consumed, based on estimate	ATC will be billed for energy consumed, based on estimate	ATC pays for the cost of installation according to LDC business practices, and is billed for energy consumed, based on estimate	ATC pays for the cost of the capacity increase / upgrade according to LDC business practices, and is billed for energy consumed, based on estimate

Appendix B – Examples of Energy Estimation Methods (for illustration only, not an all inclusive list)

Equipment Type	kWh/yr Used per Item	Formulas for calculating kWh usage
Battery Chargers	10,074	Charger = 1.15 kW * 8760 hrs/yr = 10074 kWh
Circuit Switchers	2,496	heater = .285 kW * 8760 hrs/yr = 2496 kWh
Transformers w/ Pumps	3,180	pumps = (2.66 kW * 180 hrs/yr) = 480; fans = (7.45 kW * 360 hrs/yr) = 2700 === 3180 kWh
Transformers w/o Pumps	2,700	fans = (7.45 kW * 360 hrs/yr) = 2700 kWh
OCB 69kV Pneumatic Op	4,750	motor=(1.05 kW*72 hrs/yr)=75; heaters=(.4 kW*8760 hrs/yr)+(.4 kW * 2920 hrs/yr)=4675 === 4750 kWh
OCB 115-230kV Pneumatic Op	4,775	motor=(1.368 kW*72 hrs/yr)=100; heaters=(.4 kW*8760 hrs/yr)+(.4 kW * 2920 hrs/yr)=4675 === 4775kWh
OCB 345V Pneumatic Op	4,800	motor=(1.75 kW*72 hrs/yr)=125; heaters=(.4 kW*8760 hrs/yr)+(.4 W * 2920 hrs/yr)=4675 === 4800 kWh
OCB 69kV Other Op	4,675	heaters=(.4 kW*8760 hrs/yr)+(.4 kW * 2920 hrs/yr)= 4675 kWh
OCB 115-230kV Other Op	4,675	heaters=(.4 kW*8760 hrs/yr)+(.4 kW * 2920 hrs/yr)= 4675 kWh
OCB 345V Other Op	4,675	heaters=(.4 kW*8760 hrs/yr)+(.4 kW * 2920 hrs/yr)= 4675 kWh
SF6 Breakers	2,496	heater = .285 kW * 8760 hrs/yr = 2496 kWh