



***Facility Study
For
Generation Interconnection
Request
GEN-2006-014***

SPP Tariff Studies

(#GEN-2006-014)

July 2007

Summary

Pursuant to the tariff and at the request of the Southwest Power Pool (SPP), Aquila performed the following Facility Study to satisfy the Facility Study Agreement executed by the requesting Customer and SPP for SPP Generation Interconnection request #GEN-2006-014.

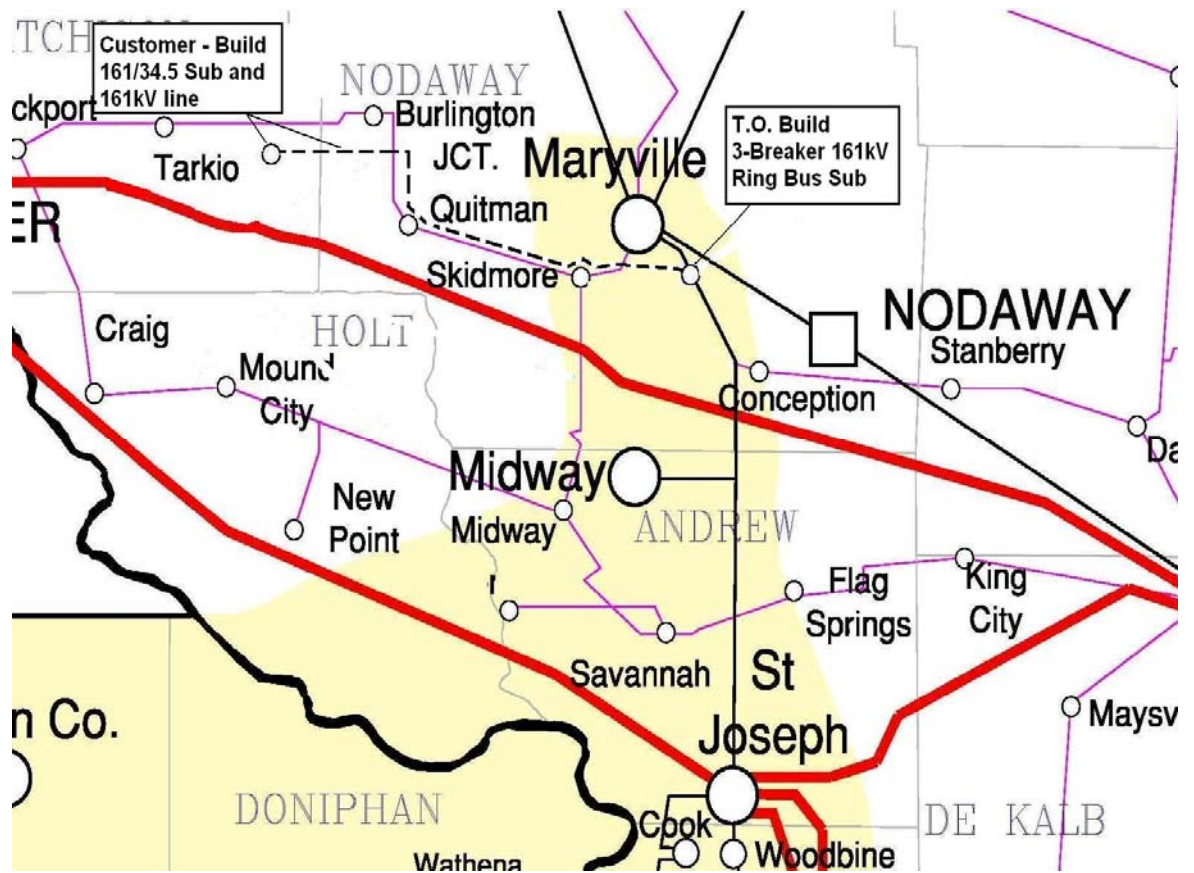


FIGURE 1. MAP OF THE LOCAL AREA



Facility Study
300 MW Wind Farm near
Tarkio, MO
SPP #GEN-2006-014

July 2, 2007
Aquila, Inc
Transmission Planning

General:

The customer is proposing a 300 MW wind farm located near Tarkio, MO. There is no transmission in the immediate area that would have sufficient capacity for this wind farm, so the customer is proposing to build a 26 mile 161 KV transmission line from the wind farm to connect to the existing 161 KV transmission system at Maryville, MO. The existing 161 KV substation at Maryville does not have sufficient space to accommodate an additional line terminal, so a new switching substation is being proposed south of the existing Maryville substation in the Maryville to Midway 161 KV. The customer's transmission line will be terminated in this new substation.

Location:

The proposed new substation will be located near the existing Maryville to Midway 161 KV line south of the Maryville Substation. The exact location will be somewhat dependent on the routing of the customer's transmission line and where it will intersect the Maryville to Midway line.

Substation Design:

The proposed substation will consist of a ring bus with three line terminals to accommodate the 161 KV line to the existing Maryville Substation, the 161 KV line to Midway, and the proposed new 161 KV customer owned line to the proposed wind farm. The substation will be rated for 2,000 Amps continuous and will have a nominal interrupting capability of 40,000 Amps.

Responsibilities of the Customer:

The Customer will be responsible for the design and construction of the 161 KV transmission line from the wind farm to the new Maryville substation including the 34.5 – 161 KV step-up facilities at the wind farm. The customer will be responsible for terminating the customer's 161 KV in the new substation. Relaying and control equipment for customer facilities are to be provided by the customer but will be subject to approval by the Aquila Substation Engineering Department to insure that they are coordinated with Aquila relaying and control facilities at the new substation, and conform to Aquila relaying and control standards. Customer communications to the new substation will be the responsibility of the customer.

Responsibilities of Aquila:

Aquila will be responsible for the design and construction of the new transmission substation consisting of a 161 KV three position ring bus located south of the existing 161 KV substation at Maryville. See Exhibit A for the one line diagram of the new substation. Aquila will be responsible for providing the substation

complete including three 161 KV circuit breakers, nine 161 KV switches, bus, structures, foundations, grounding, relaying, control, metering, and land. Aquila will provide a dead end structure in the substation for the termination of the customer's 161 KV transmission line.

Revenue Metering:

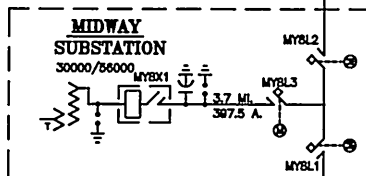
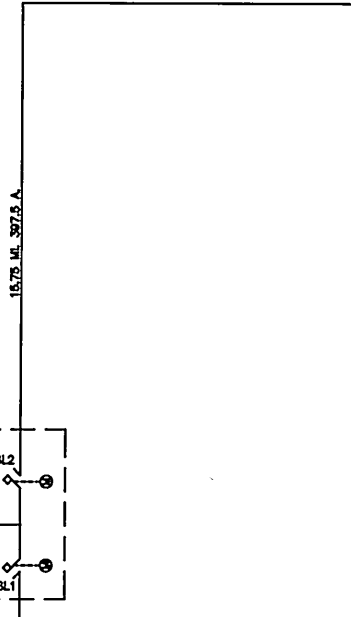
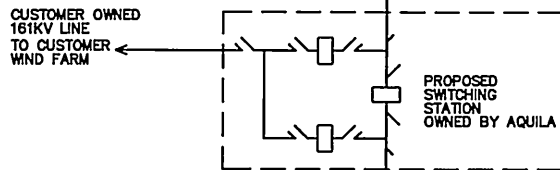
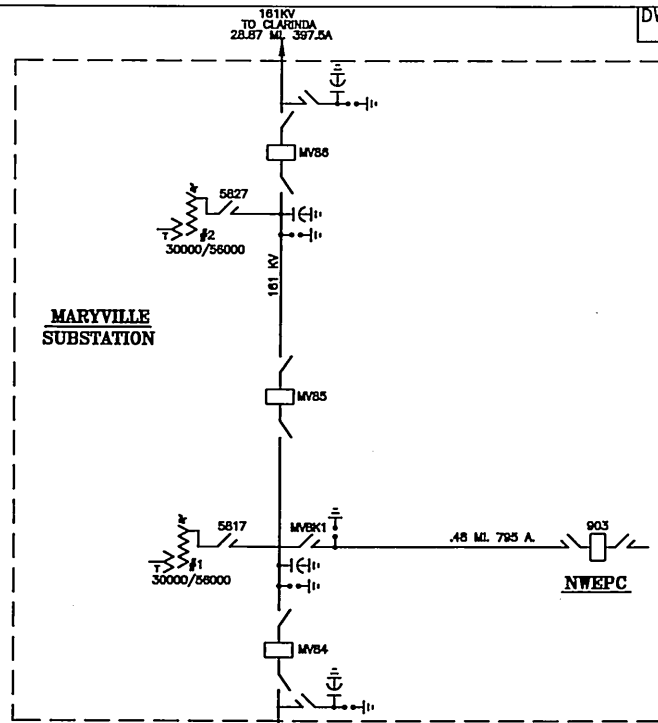
Revenue Metering of the wind farm will be accomplished with metering accuracy CTs and PTs and associated billing metering in the new substation near the point where the customer's 161 KV transmission line is terminated on the substation dead end structure. A RTU and associated communications equipment will be installed in the substation to transmit the MW, MVAR, voltage, and other information to the system operations center.

Fault Current:

The maximum three phase fault current for the 161 KV bus is currently 10,281 Amperes. The addition of the wind farm will increase the three phase fault current to 11,216 Amperes. The proposed fault current levels are below the rated fault current capability of all the existing equipment in the area. Also the continuous current rating of all affected equipment is sufficient to accommodate the wind farm, so there is no requirement for replacement of any existing equipment.

Estimated Cost:

The cost of the new substation and associated 161 KV line terminations is estimated to be \$3,500,000. The customer will be responsible for such cost.



REV	BY	CHK	DATE	DESCRIPTION
REVISIONS				

AQUILA
 KANSAS CITY, MISSOURI 64138
 FACILITY STUDY
 #GEN-2006-014
 EXHIBIT A

DRAWN	LMC	DATE	5/11/07
CAD REF.		CHK. BY	D.M.
W.O. NO.		REVISION	0
SCALE	N.T.S.		
SHEET	1 OF 1		