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Public Utility Commission of Texas

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Memorandum

PUBLIC UTILITY COMMISSION
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TO: Policy Development Division

FROM: Tony Marciano Darrin Pfannenstiel
Engineering Specialist Attorney
Electric Division Legal Division

DATE: November 15, 2002

SUBJECT: PUC DOCKET NO. 26185: APPLICATION OF GUADALUPE VALLEY ELECTRIC COOPERATIVE, INC. ("GVEC") TO AMEND A CERTIFICATE OF CONVENIENCE AND NECESSITY FOR A PROPOSED TRANSMISSION LINE WITHIN GUADALUPE COUNTY.

Guadalupe Valley Electric Cooperative, Inc. ("GVEC") requests approval of its application to amend a Certificate of Convenience and Necessity (CCN) for a proposed transmission line within Guadalupe County, Texas. GVEC has proposed installation of approximately 14.60 miles, single circuit 138-kilovolts (kV) transmission line that is initially going to operate at 69-kV. The following are Staff's conclusions and recommendations regarding this application.

CONCLUSIONS AND RECOMMENDATIONS

Staff has reviewed GVEC's application for an amendment of its CCN to allow for construction of a transmission line within Guadalupe County, Texas. Staff believes that GVEC has adequately addressed the factors described in PURA §37.056. Staff recommends that, upon approval of GVEC's application, the Commission order GVEC to follow the Measures to Mitigate Construction Impacts listed in this memorandum.

PROJECT DESCRIPTION

GVEC is planning to construct 14.60 miles of overhead transmission line. Of the 14.60 miles of transmission line, 3.31 miles will be constructed in parallel to the existing single circuit transmission line. The new transmission line will be design to be able to carry up to 138,000 volts. However, at the initial operation the conductor will only carry 69,000 volts. The new transmission line will have the capacity of carrying 920 amperes of current and 220 megavolt-amperes (MVA) of apparent power. The proposed 138,000 volt transmission line will begins at a point on the previously certified Capote to Hickory Forest 138,000 volt transmission line, and it will end at the New Berlin Substation. The right-of-way (ROW) for the proposed transmission line project will be between 50 to 100 feet wide.

NEED FOR PROPOSED CONSTRUCTION

GVEC explains that without the proposed transmission line between the existing Hickory Forest and New Berlin Substations, contingencies in the area will continue to threaten the integrity of the transmission system and its ability to provide a stable and acceptable voltage to growing loads in the GVEC electric system. Also, if the existing transmission system is allowed to operate in its present condition, public safety and property will be at risk due to inadequate line-to-ground clearances that is caused by excessive overloading. Over the long-term, a continuation of excessive conductor loading could lead to irreversible damage to transmission circuits in the area, and lead to extended customer service interruptions due to equipment failure. Finally, continued development in the area will place more customers at risk of an extended power interruption due to an outage on the common structure double circuit transmission line that now supplies the New Berlin Substation.

GVEC response to a set of issues that were identified by PUCT is as follows:

1. Has the Electric Reliability Council of Texas (ERCOT) Independent System Operator (ISO) recommended the proposed transmission project as necessary to alleviate "existing and potential transmission and distribution constraints and system needs within ERCOT" in the annual report filed pursuant to PURA §39.155(b)? If not, is there a need for the proposed transmission project?

GVEC explained that ERCOT was notified of the proposed project. However, ERCOT has not recommended the proposed project as necessary to alleviate "existing and potential transmission and distribution constraints and system needs within ERCOT." However, there is a need for the proposed transmission project as explained above.

2. If such a need exists, is the proposed transmission project the best option to meet the need, based on an analysis taking into account considerations of efficiency, reliability, costs, and benefits?

GVEC explained that the proposed transmission line is the best option to meet the need, based on an analysis taking into account considerations of efficiency, reliability, costs, and benefits.

3. For utilities subject to the unbundling requirements of PURA §39.051, is the proposed transmission project the best option when compared to employing distribution facilities to meet the specified need?

GVEC explains that this question is not applicable to them.

4. For utilities that are not subject to the unbundling requirement of PURA §39.051, is the proposed transmission project the best option when compared to employing

distribution facilities, distributed generation, and/or energy efficiency to meet the specified need?

GVEC explains that a wide variety of demand site management and conservation programs such as home energy audits, conservation seven plan financing program, good cents home program, and peak time intermission program have been implemented in immediate area. However, the proposed project is the best option when compared to employing distribution facilities and distributed generation to meet the specified need.

ALTERNATIVES TO THE PROJECT

GVEC evaluated five alternatives to the project and they are as follows:

1. Develop the distribution system infrastructure sufficient to transfer load from the problem areas to neighboring substations at McQueeney and Geronimo. The estimated capital cost of this alternative is \$9,362,000. Because this alternative is cost prohibitive and contains inherent weaknesses, it was rejected.
2. Deploy distributed generation at the New Berlin and Hickory Forest Substations. Approximately a total of 41,000 Kilo Watts of power is required to alleviate overloading and voltage problems. The estimated total cost for distributed generation is \$14,350,000. Because this alternative is cost prohibitive, it was rejected.
3. Construct approximately 17 miles of a new 69-kV transmission line between the Hickory Forest and Lavernia Substations. The estimated capital cost of this alternative is \$4,352,000. With this alternative, the New Berlin Substation will still be at risk of a total interruption of electric service in the event of the loss of the common structure double circuit that now supplies this substation. Because the effects of this contingency are not mitigated, this alternative was rejected.
4. Construct approximately 16 miles of a new 69-kV transmission line between the Hickory Forest and Wilson Tap. The estimated capital cost of this alternative is \$4,986,000. With this alternative, the New Berlin Substation will still be at risk of a total interruption of electric service in the event of the loss of the common structure double circuit that now supplies this substation. Because the effects of this contingency are not mitigated, this alternative was rejected.
5. Construct approximately 14.60 miles of a new a 138-kV transmission line that will initially operate at 69-kV between the Hickory Forest ad New Berlin Substations. The estimated capital cost of this alternative, which includes the substation and transmission line cost, is \$3,920,800. This alternative provides the greatest benefit to the transmission system. Because this option provides the greatest enhancement to transmission system performance, and its cost is comparable to the other viable transmission options that were considered, it is the recommended alternative.

GVEC has demonstrated that Alternative No. 5 provides a better technical and economical solution than other considered alternatives for the proposed transmission line project.

ROUTING ALTERNATIVES

PBS&J, a consultant for GVEC, explains that although all alternative routes evaluated in the environmental study report are environmentally acceptable routes, it was the consensus of PBS&J evaluators that route number four was the most favorable alternative after evaluating the project criteria. PBS&J explains that the preferred route was based on potential environmental impacts, engineering constraints, public input/community values, costs, and landowner/agency concerns and preferences. Although route number four is slightly more expensive than route number one, but it provides additional environmental benefits. Some the environmental benefits for choosing route number four as a preferred alternative route instead of route number one are as follows:

- It contains one less habitable structure;
- It parallels more existing transmission line, highway, and pipeline Right-Of-Way;
- It does not cross any cropland;
- It crosses fewer 100-year floodplains, and woodland;
- It parallels fewer streams.

Please refer to Attachment A-1, which is a map showing GVEC's environmentally preferred route for the proposed project. A table summary comparative analysis of some of the environmental routes for the proposed transmission project are shown as follows:

Summary of Comparative Analysis Table				
Environmental Route	Line Segments	Route Length (miles)	Habitable Structures within 200 feet of ROW Centerline	Cost
Alternative 1	D-E-G-I	11.12*	6	\$ 3,696,127
Alternative 4 (Preferred Route)	A-B-C'-D'-E-G-I	11.29*	5	\$ 3,920,800
Alternative 6	A-B-C'-D'-E-H-K-L	14.20	19	\$ 4,699,664
Alternative 7	A-B-C'-F-K-L	14.19	20	\$ 4,633,668
Alternative 8	A-C-C'-D'-E-G-I	11.04*	10	\$ 4,209,412

*Plus approximately 3,600 feet of new circuit on the existing structures.

PROJECT COSTS

The estimated costs of GVEC's project are as follows:

Estimated Cost	Transmission Facilities	Substation Facilities
Right of way (easement and fee)	\$ 224,786	\$0
Material and supplies	\$ 1,457,281	\$6,000
Labor and transportation (utility)	\$ 50,000	\$25,000
Labor and transportation (contract)	\$ 1,045,383	\$41,000
Stores	\$ 0	\$18,700
Engineering and Admin (utility)	\$ 150,000	\$0
Engineering and Consulting (contract)	\$ 877,650	\$25,000
Estimated Total Cost	\$ 3,805,100	\$115,700

The estimated total cost for GVEC's project for the proposed 138-kV transmission line and the substation facilities is \$3,920,800.

ENVIRONMENTAL INTEGRITY

GVEC indicates that Texas Department of Transportation (TxDOT) stated that their San Antonio District office has requested copies of all regulatory permits and clearances where proposed transmission lines cross state-maintained roads and highways. Since there were not alternative routes at time the letter was sent, TxDOT had no additional comments. Texas Historical Commission (THC) commented that not much of the study area had been surveyed by professional archeologists and that it was possible that the proposed project could have adverse effects on historic properties. The agency suggested additional information, including alternative routes, be provided when available, and noted that surveys of portions of the line could be required. Texas Parks and Wildlife Department (TPWD) provided information on federal and state listed endangered, threatened, and candidate species of potential occurrence in Guadalupe County. They also expressed concerns with regard to potential impacts to wetlands, riparian areas, floodplains, native vegetation communities, and remnant natural communities, and recommended that these areas be identified and avoided. The agency included two publications with recommendations to follow the guidelines included in each. These publications were: *TPWD Guidelines for Construction and Clearing within Riparian Areas* and *TPWD Recommendations for Electrical Transmission Line Design and Construction*. TPWD's letter also included information regarding permits for disturbing streambeds and impacting wetlands and waters of the U.S., information on the Migratory Bird Treaty Act, and information regarding methods to minimize or avoid avian electrocutions and wire strikes.

The US Fish and Wildlife Service (USFWS) stated that, currently, no federally listed threatened or endangered species are considered to be of regular occurrence in Guadalupe County. However, two candidate species were mentioned that could potentially occur in the county. USFWS also expressed concerns about potential impacts to wetlands and riparian zones, and suggested that the proposed transmission line be designed and constructed consistent with guidelines in the publication: *Suggested Practices for Raptor Protection on Power Lines-the State of the Art in 1996*. GVEC has indicated that permits/approvals will be obtained following PUC approval of the proposed transmission line route, and prior to initiating construction.

COMMUNITY VALUES

PBS&J explains that on January 8, 2002 a public open-house meeting was held at the Hillcrest Assembly of God in Seguin, TX. Landowners along the alternative route were invited, as well as local elected officials. The meeting was intended to solicit comments from citizens, landowners, and public officials concerning the proposed project. Public involvement contributed to selection of the preferred route for the project. The primary criteria considered to measure potential land use impacts for the proposed project included proximity to habitable structures, overall length using or paralleling existing transmission line ROW, and length parallel to other existing ROW. Construction of proposed 138-kV transmission line could have both temporary and permanent aesthetic effects. Temporary impacts would include views of the actual assembly and erection of the structures and clearing of the ROW. Where wooded areas are cleared, the brush and wood debris could have a temporary negative impact on the local visual environment. Permanent impacts from the project would involve the views of the structures and lines as well as views of cleared ROW.

GVEC has indicated that there are no commercial AM radio transmitters located within 10,000 feet of the proposed route centerline. There are not any FM radios, microwave, or other similar electronics installations located within 2,000 feet of the center line of the proposed transmission project. No Federal Aviation Administration (FAA) registered airstrips are located within 10,000 feet of the center line of the proposed transmission project. There are no parks or recreation areas located within 1,000 feet of the project center line. There are no recorded historical and archaeological sites located within 1,000 feet of the proposed route center line. There are no Archaeological Landmarks that are located within 1,000 feet of the proposed route centerline.

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ORDERING PARAGRAPHS

Commission Staff recommends that the following paragraphs be included in the Order of the Commission.

Texas Historical Commission: In the event the utility or its contractors encounter any archeological artifacts or other cultural resources during project construction, work shall cease immediately in the vicinity of the resource and the discovery shall be reported to the Texas Historical Commission (THC). The utility will take action as directed by the THC.

Raptor Protection: The utility shall follow the procedures outlined in the following publication for protecting raptors: Suggested Practices for Raptor Protection on Power Lines, The State of the Art in 1996, Avian Power Line Interaction Committee, 1996.

Herbicide Use: The utility shall exercise extreme care to avoid affecting non-targeted vegetation or animal life when using chemical herbicides to control vegetation within the right-of-way. Herbicide use shall comply with rules and guidelines established in the *Federal Insecticide, Fungicide and Rodenticide Act* and with Texas Department of Agriculture regulations.

Flora and Fauna Disturbance: The utility shall minimize the amount of flora and fauna disturbed during construction of the proposed transmission line and shall revegetate using native species considering landowner preferences. To the maximum extent practicable, the utility shall avoid adverse environmental impacts to sensitive wildlife and vegetative habitats as identified by Texas Parks and Wildlife and the United States Fish and Wildlife.

Erosion Control: The utility shall implement erosion control measures as appropriate. Also, the utility shall return the site to its original contours and grades unless otherwise agreed to by the landowners or the landowners' representative.

Reporting Requirements: The utility shall comply with the reporting requirements of PUC Subst. R. 25.83.

Landowner Impact: The utility shall cooperate with the directly affected landowners to implement minor deviations in the Approved Route to minimize the impact.

Attachment

cc: Brian Almon