

REVISION TO ADDENDUM TO THE
GENERATOR INTERCONNECTION SYSTEM IMPACT STUDY
FOR PROPOSED XXXXXXXXXXXXXXXXXXXXX GENERATION
ON THE AMRAD-ARTESIA 345 kV LINE

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INTRODUCTION

At the request of XXXXXXXXXXXXX (XXX), El Paso Electric Company (EPE) completed the Generator Interconnection Feasibility Study and System Impact Study (SIS) for the proposed XXXXXXXXXXXXXXXXXXXX project to be interconnected to the Amrad-Artesia 345 kV Line. These studies determined the system upgrades necessary on the transmission system to accommodate the interconnection of up to 500 MW of wind generation on the Amrad-Artesia 345 kV line. In its Interconnection Request, XXX requested that EPE study its generating facility for Energy Resource Interconnection Service (ERIS). The ERIS analysis was inadvertently omitted from the studies. This Addendum was performed to correct this deficiency and determine the amount of electric output that XXX can deliver into the transmission system using existing firm or nonfirm capacity on an as available basis. Results of the ERIS analysis are shown below.

Also, as a side correction to the studies, one of the required upgrades determined in the Feasibility Study and SIS was a new 345 kV line from the XXX interconnection point to EPE's future Picante Substation. The studies stated that the estimated length of the line was 55 miles. During the results meeting of the SIS, representatives from XXX stated that it appears the route of the required line will be significantly longer than what was estimated in the SIS and asked EPE to verify the length of the line. Since the proposed line will pass through military land, EPE's Right-Of-Way (ROW) Department met with the military to discuss a proposed line route. The military stated that it will only allow EPE to parallel the existing Eddy to Amrad to Caliente 345 kV line due to their plans for future training sites in the area. The military said they will allow an offset of up to 1000 feet from the existing line so that EPE will not have the two lines, the existing line and the proposed new line, in a common corridor. It is estimated that the revised total distance of the XXX-Picante 345 kV transmission line will be approximately 102 miles. Therefore, using the 102 mile line length and based on a per mile cost of \$1,484,436 (as per the Burns and McDonnell report) the estimated cost of the XXX-Picante 345 kV transmission line will increase from \$81,646,000 to \$151,412,472. Detailed costs for this system upgrade will be included in the Facilities Study. However, with this proposed line route, EPE investigated terminating the new line at a point short of Picante Substation by approximately 10 miles. This will reduce the exposure to military land and decrease the overall line length but will require the addition of a switching station. It is EPE's estimate that this option will be neutral or reduce the cost of the facility. This option is being cost evaluated in the Facilities Study.

Energy Resource Interconnection Service Analysis of XXX Generation

As part of its Interconnection Request, XXX requested that EPE perform an analysis of its generating facility for Energy Resource Interconnection Service (ERIS). As per EPE's FERC Open Access Transmission Tariff, ERIS is defined as "an Interconnection Service that allows the Interconnection Customer to connect its Generating Facility to the Transmission Provider's Transmission System to be eligible to deliver the Generating Facility's electric output using the existing firm or nonfirm capacity of the Transmission Provider's Transmission System on an as available basis." Therefore, a powerflow analysis was performed to determine the amount of generation output XXX can deliver into the grid using

the available transmission capacity on an “as available” basis (without the need for upgrades to the EPE or neighboring transmission systems).

Based on results from the Feasibility Study and System Impact Study, it was determined that the worst contingency that will cause a criteria violation due to the interconnection of the XXX generation is the Amrad-Caliente 345 kV line outage. The studies determined that with the XXX wind project in service, the Amrad 345/115 kV autotransformer is the most limiting element due to the additional power flow over it produced by the XXX generation.

Since the Amrad-Caliente 345 kV line contingency was determined to be the worst contingency in the studies and the most limiting element was the Amrad 345/115 kV autotransformer, this element was used in the ERIS analysis to determine the amount of generation the XXX project can produce without the need for additional upgrades on the EPE or neighboring transmission systems.

This analysis was performed using the 2010 HS generation interconnection case from the SIS. The contingency analysis was performed by removing the required upgrades in the case and keeping the XXX generation output at 200 MW. Analyses were performed varying load levels to reflect off peak and shoulder hours and results of these analyses found criteria violations that are consistent with those found in the previous studies.

After performing the analyses described above, powerflow analyses were performed reducing the XXX generation output levels until the overload of the Amrad autotransformer was eliminated. The table below shows results of the ERIS analysis.

**ENERGY RESOURCE INTERCONNECTION SERVICE ANALYSIS ON
2010 HS XXX GENERATION INTERCONNECTION CASE**

CONTINGENCY	XXX GENERATION OUTPUT (MW)	LOADING OF AMRAD AUTOTRANSFORMER (%) *
AMRAD-CALIENTE 345 kV LINE	200	151.5
	150	133.3
	100	114.6
	75	105.2
	60	99.5

* Based on emergency rating

As can be seen in the table above, the Amrad autotransformer overload is eliminated when the XXX generation output is at 60 MW. At an XXX generation output of 60 MW, the Amrad autotransformer loads to 99.5% of its emergency rating during the Amrad-Caliente 345 kV line outage. Any XXX generation level above 60 MW will load the Amrad autotransformer to over 100% of its emergency rating and will require system upgrades to eliminate the criteria violation.

In conclusion, results of the ERIS analysis shows that the XXX generation project can generate up to 60 MW of power using existing available firm or non-firm capacity without causing criteria violations to the EPE or neighboring transmission systems. The limiting element for this service is the Amrad 345/115 kV autotransformer, which will load to over 100% of its emergency rating

if the XXX project produces a generation output above 60 MW.