

# **Golden Spread Electric Cooperative, Inc.**

Attachment K Transmission Plan Development Scope

## **Revision History**

<b>Date of Revision</b>	<b>Author</b>	<b>Change Description</b>	<b>Comments</b>
<b>04/18/2017</b>	GSEC Staff	Initial Draft	Reviewed by CWS on 5/03/2017
<b>05/04/2017</b>	GSEC Staff	Added language based on 05/03/2017 CWS feedback	
<b>06/20/2022</b>	GSEC Staff	Revision for 2022 updates	

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# 1. Introduction

In accordance with Section 4.2 of Attachment K to Golden Spread’s Open Access Transmission Tariff (OATT), this Plan Development Scope sets out the scope, assumptions, methodologies and milestones for consideration as Golden Spread completes its Transmission Planning Process (TPP). The objective of this Plan Development Scope and the studies that will be prepared is to determine what impacts additional generation and new transmission projects will have on the Special Facilities Golden Spread owns on behalf of South Plains Electric Cooperative (SPEC), Big Country Electric Cooperative (BCEC), and Greenbelt Electric Cooperative (GEC) (collectively depicted in the map of all of Golden Spread’s members below) and which are covered under the Golden Spread OATT. It will be determined what, if any, actions need to be taken to ensure reliable power delivery over Special Facilities on behalf of third-party customers and to the loads in these systems. Additionally, member cooperative buses will have the modeled, equivalent circuit modified to accurately represent load and power distribution throughout the member areas.

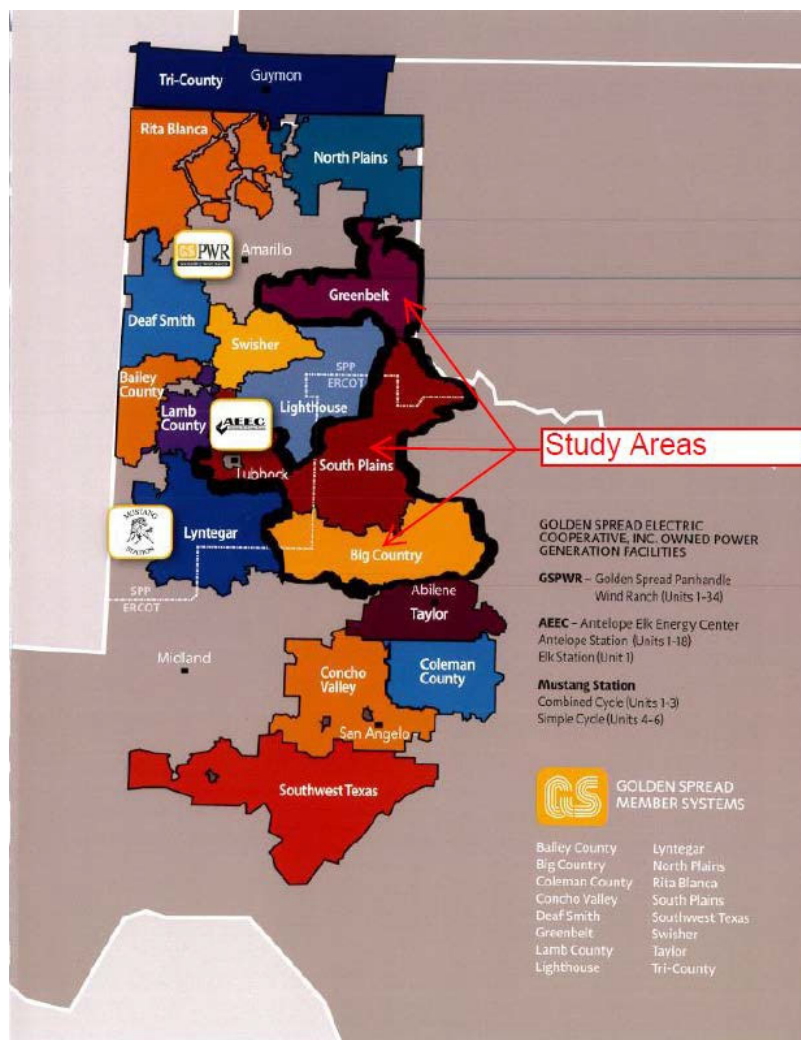


Figure 1: GSEC Service Territory with Study Area

## **2. Study Methodology**

### **2.1 Study Scope**

The SPEC, BCEC, and GEC Special Facilities included in this study are in the Texas Panhandle/South Plains areas, and are supplied power by Golden Spread through the Southwest Power Pool (SPP) power grid. There is one existing transmission customer on the SPEC Special Facilities that delivers power to the SPP power grid. There are currently no transmission or interconnection requests in the queue. The SPP 2022 ITP FINAL models will be used to determine the effects of additional loads, generation, and transmission expected over the next ten years. The SPP 2022 ITP FINAL load flow models are the provided by SPP as used in their reliability studies. An ACCC contingency analysis will be performed by using the software developed by Siemens PTI PSS®E v.34.9. The results of the analysis will be shown in the format set out in Section 3.1 of this document.

### **2.2 Study Process**

Model Assumptions:

- 2022 ITP models with all 2021 approved upgrade projects included
  - No violations are present prior to running contingencies in the 2022 base model at the member cooperative buses
  - Model years 2022, 2023, 2024, 2027, and 2032 are studied
  - Summer and Winter Peak Loads studied
  - Total of 17 models analyzed throughout study

## 2.3 Study Criteria

The criteria used for this study is outlined below and is taken from the NERC Transmission Planning (TPL) Reliability Standards.

### **Category P0 –**

System Performance Under Normal (No Contingency, or N-0) Conditions (Category P0) as referenced in Table 1 of NERC Standard TPL-001-4

- Voltage: 0.95 to 1.05 per unit
- Line Loading: 100 percent of continuous rating
- Transformer Loading: 100% of highest 65 °C rating

### **Category P1-P2 Events –**

AC contingency analysis (N-1) System Performance Following Loss of a Single Element (Category P1-P2) as referenced in Table 1 of NERC Standard TPL-001-4

- Voltage: 0.95 to 1.05 per unit (PRPA)
- Line Loading: 100 percent of continuous rating or emergency rating if applicable
- Transformer Loading: 100% of highest 65 °C rating

The analysis will be conducted using Siemens PTI PSS®E v34.9 Category P0, P1, and P2; contingency analysis will be performed with and without the approved changes and the system performance was assessed per the NERC Reliability Standards TPL-001-4. Only new violations, which include overloads above 100 percent of the system element rating, voltages below 0.95 per unit under contingency, and voltages above 1.05 per unit under contingency observed only after the addition of generation, load or new transmission, will be reported.

### 3. Results

#### 3.1 Potential Overloads and Violations

After the analysis is complete, those buses and transmission lines that were shown to have violations due to the forecasted construction will be shown. The table below gives the format for a detailed list of the violations and the scenario for which it occurs. Table X also outlines the steps taken to mitigate these violations, which were studied and modeled in Siemens PTI Version PSS®E v34.9 software. Reference screenshots of the analyzed buses included in this study will be prepared in an Appendix to the study.

Table 1: Potential Violations

Season	Scenario	Facility Name	Contingency Name	Rate A (MVA)	Rate B (MVA)	Flow	Current Loading (%)

Mitigation suggestions will also be addressed in the study. The mitigation suggestions are recommended based on the best engineering decisions to resolve any potential violation issues discovered and long-term reliability of the system. The suggested mitigations will also attempt to make the best economic decision for transmission planning purposes. Pursuant to Section 10 of Attachment K, nothing in the Plan is intended to supersede cost obligations as set forth in other parts of the OATT. The costs of new facilities required because of individual requests for transmission and generator interconnection service shall be allocated to customers pursuant to the OATT. The costs of new facilities that do not fit under the existing rate structures of the OATT shall be directly assigned to the requesting customer.

If, after an AC contingency analysis was completed, it was revealed that there is a strong potential for multiple bus/transmission line violations when approved SPP projects were added to the power system, Golden Spread will report steps to mitigate violations in an appendix to the study. Steps to mitigate these violations will be discussed and planned among GSEC and affected member cooperatives as soon as possible to prevent any future service disruptions. Table X in the format below will show the recommended upgrade list based off this study, and dates when these additions should be completed by (and include costs?).

Table 2: Conclusion Table

Project Needed	Date Needed	Estimated Cost


With respect to supporting data, assumptions and other materials used to prepare the study to determine Golden Spread’s TPP, confidentiality and Critical Energy Infrastructure Information provisions are set out in Attachment K of the OATT.



#### **4. TPP Milestones**

Golden Spread intends to follow the following milestones with respect to its TPP, concluding in the Final Plan contemplated by Attachment K:

<b>Activity</b>	<b>Date</b>
Posting of Notice Soliciting Input	May 9, 2022
Comments Due on Notice Soliciting Input	June 8, 2022
Posting of this Plan Development Scope	June 20, 2022
Comments Due on Plan Development Scope	July 20, 2022
Studies Conducted	August 18, 2022
Stakeholder Meeting	August 18, 2022
Draft Plan Posted	September 7, 2022
Comments on Draft Plan Due	October 7, 2022
Revised Plan (if necessary)	October 14, 2022
Final Plan Posted	October 24, 2022

All milestones are subject to further revision by Golden Spread. Any such revisions will be posted on the transmission web page.