



# **SPP** *Southwest Power Pool*

## *Attachment AA Flowgate Upgrade Request Study*

*Requested By:  
Western Farmers Electric Cooperative*

*For Flowgates:  
SwsAnaSwsFtc and CorCorSwsAna*

*And Supplementary For Flowgates:  
ElkXfrTucOku and CatLlaNesOne*

**SPP ENGINEERING DEPARTMENT,  
PLANNING SECTION**

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## **Introduction**

In accordance with the Southwest Power Pool (SPP) Open Access Transmission Tariff (OATT) Attachment AA (Transmission Service Prepayment), Western Farmers Electric Cooperative has requested a flowgate upgrade request study for SwsAnaSwsFtc and CorCorSwsAna.

It must be noted that removal of an existing limit does not guarantee an increase in Available Transfer Capability (ATC) for a particular commercial path (POR/POD) for a particular timeframe. The increase would depend on the next limiting facility, which may not be listed in this document. Removal of an existing limit does not guarantee approval of a transmission service request.

## **Study Methodology**

Analysis of the requested flowgates was conducted using the SPP monthly firm AFC calculation MS Access database engine as a starting point, and per SPP Criteria 4 REGIONAL CALCULATION OF AVAILABLE TRANSFER CAPABILITY. However, a transmission distribution (TDF) cutoff of 5% (rather than 3%) was utilized for analyzing prior refused monthly firm service, to match the North American Electric Reliability Council (NERC) Transmission Loading Relief (TLR) Procedure cutoff. Flowgate upgrade data was solicited from the Transmission Owners (TOs).

## **Requested Flowgate Analysis**

### **1. SwsAnaSwsFtc**

The Southwestern PS-Anadarko 138 kV line for an outage of the Southwestern PS-Ft. Cobb 138 kV line OTDF flowgate may be upgraded from an emergency summer rating of 210 MVA to 235 MVA for an estimated cost of \$47,000 with a lead-time requirement of 9 months. The current limit is based on a wavetrapp at Southwestern PS. The next limit would be the Southwestern PS-Anadarko 138 kV conductor. Neglecting other limiting flowgates and using a conservative monthly firm price of \$730, the upgraded flowgate could support increased revenues of about \$18,000 per month. For summers 2004 and 2005 the flowgate is currently found to be a negative limit to 59 and 61 commercial paths, respectively. Based on calculations using current data, the flowgate may have been a negative limit contributing to refusals of monthly firm service of about \$2,348,000 for the period May 2003-May 2004.

This facility will be recommended for upgrade as stated previously in SPP Attachment AA Study AA-2004-001. It is recognized as a limitation for transmission service. The flowgate is recommended for upgrade at a cost of \$47,000.

## **2. CorCorSwsAna**

The Cornville-Cornville Tap 138 kV line for an outage of the Southwestern PS-Anadarko 138 kV line OTDF flowgate may be upgraded from an emergency summer rating of 105 MVA to 143 MVA for an estimated cost of \$47,000 with a lead-time requirement of 9 months. The current limit is based on a wavetrap at Cornville. The next limit would be the Cornville Sub Switches. Neglecting other limiting flowgates and using a conservative monthly firm price of \$730, the upgraded flowgate could support increased revenues of about \$28,000 per month. For summers 2004 and 2005 the flowgate is currently found to be a negative limit to 54 and 54 commercial paths, respectively. Based on calculations using current data, the flowgate may have been a negative limit contributing to refusals of monthly firm service of about \$2,348,000 for the period May 2003-May 2004.

This facility will be recommended for upgrade as stated previously in SPP Attachment AA Study AA-2004-001. It is recognized as a limitation for transmission service. The flowgate is recommended for upgrade at a cost of \$47,000.

## **Supplemental Flowgate Analysis**

In addition to the requested flowgates, SPP has assessed the following flowgates and the improvement to the market and SPP.

### **1. ElkXfrTucOku**

The Elk City 230/138 kV transformer for an outage of the Tuco-Oklaunion 345 kV line OTDF flowgate may be upgraded from an emergency summer rating of 263 MVA to 287 MVA for an estimated cost of \$80,000 with a lead-time requirement of 9 months. The current limit is based on a metering CT on the Elk City 230/138 kV transformer. The next limit would be the switches and breakers on the lowside of the transformer. Neglecting other limiting flowgates and using a conservative monthly firm price of \$730, the upgraded flowgate could support increased revenues of about \$18,000 per month. For summers 2004 and 2005 the flowgate is currently found to be a negative limit to 237 and 262 commercial paths, respectively. Based on calculations using current data, the flowgate may have been a negative limit contributing to refusals of monthly firm service of about \$2,279,000 for the period May 2003-May 2004.

This facility will be recommended for upgrade. It is recognized as a limitation for transmission service. The estimated cost for this facility is \$80,000.

### **2. CatLlaNesOne**

The Catoosa-Lynn Lane East 138 kV line for an outage of the (Northeastern) N.E.S.-Oneta 345 kV line OTDF flowgate may be upgraded from an emergency summer rating of 235 MVA to 262 MVA for an estimated cost of \$50,000 with a lead-time requirement of 9 months. The current limit is based on wavetrap jumpers and strain bus at Catoosa. The next limit would be the Catoosa-Lynn Lane East 138 kV line conductor for summer, and switches at Catoosa for winter.

Neglecting other limiting flowgates and using a conservative monthly firm price of \$730, the upgraded flowgate could support increased revenues of about \$20,000 per month. For summers 2004 and 2005 the flowgate is currently found to be a negative limit to 115 and 118 commercial paths, respectively. Based on calculations using current data, the flowgate may have not been a negative limit contributing to any refusals of monthly firm service for the period May 2003-May 2004.

The cost of this facility is greater than the deposited amount. SPP does not currently have other customers requesting to upgrade this facility. Therefore this facility will not be upgraded due to lack of sufficient funds.

### Analysis Summary Table

<u>Flowgate</u>	<u>Cost of 1st Upgrade</u>	<u>Monthly Revenue</u>	<u>Neg. Paths</u>		<u>Contributing Refusals</u>
			<u>2004S</u>	<u>2005S</u>	
<b>Requested:</b>					
CorCorSwsAna	\$ 47,000	\$ 9,000	54	54	\$ 2,348,000
SwsAnaSwsFtc	\$ 47,000	\$ 18,000	59	61	\$ 2,348,000
<b>Supplemental:</b>					
ElkXfrTucOku	\$ 80,000	\$ 18,000	237	262	\$ 2,279,000
CatLlaNesOne	\$ 50,000	\$ 20,000	115	118	\$ -

### Recommended Projects Table

<u>Flowgate</u>	<u>Facility to Upgrade</u>	<u>Owner</u>	<u>Est. Cost</u>	<u>Lead-time Months</u>
<b>Requested:</b>				
CorCorSwsAna	Cornville: wavetrap	AEPW	\$ 47,000	9
SwsAnaSwsFtc	Southwestern PS: wavetrap	AEPW	\$ 47,000	9
<b>Supplemental:</b>				
ElkXfrTucOku	Elk City: metering CT	AEPW	\$ 80,000	9