



2009 Cochise County Study Group Report

6th BTA Workshop

Carnegie Center, Phoenix, AZ

By SWTC on behalf of CCSG Participants

June 3-4, 2010

CCSG Beginnings

- The Cochise County Study Group (CCSG) was originally formed to address the transmission and load serving concerns specific to the Cochise County study area.
- Study participants:
 - Funding Members -
 - Arizona Public Service Company
 - Tucson Electric Power Company (has one retail customer in study area)
 - SSVEC
 - SWTC (as current sole transmission provider for SSVEC)
 - Active Members -
 - Fort Huachuca Military Reservation Staff (retail customer of TEP)
 - BLM – Tucson Field Office
 - Western Area Power Administration.
 - Other participants -
 - ACC Staff
 - Southwestern Power Group (Bowie Power Station and SunZia Transmission Project)
 - Northern Arizona University

CCSG Beginnings, cont.

- The CCSG would also like to respectfully acknowledge the efforts of their Chairman, the late Mr. Ken Bagley of Genesee Consulting. Mr. Bagley was instrumental in pulling the group together and building consensus for the various issues facing the CCSG. His integrity, leadership, technical knowledge, and his ability to be a calming influence is a tribute to the success of the CCSG and this report.

Study Report Introduction

- Prepared by Cochise County Study Group (CCSG) participants in response to Arizona Corporation Commission (ACC) Decision 70635, dated December 3, 2008.
- ACC Decision 70635 issued after ACC Staff concluded in its review of the 5th Biennial Transmission Assessment (BTA), that additional radial transmission solutions would only perpetuate “restoration of service” practices in Cochise County.

ACC 5th BTA Decision #70635

- “i. APS, SSVEC, and TEP shall perform collaborative studies and shall file a report of those studies for the next BTA that establishes a long range system plan for Cochise County that is found on the principle of continuity of service following a transmission line outage. SWTC shall participate in the study effort as SSVEC’s current sole transmission provider. Relevant elements of that plan shall be incorporated in each transmission service provider’s respective ten year plans with defined in-service dates and shall be filed with the Commission in January 20[10].”

Executive Summary

- In May 2009, the CCSG retained PDS Consulting, PLC (PDS) to perform the technical studies with the intent of meeting the objective of the ACC Order.
- Technical Report concluded that various sections of Cochise County loads cannot be reliably served without interruption following an outage of four critical High Voltage (HV) elements in 2013 and subsequently requiring “restoration of service:”
 - Adams-Boothill 115 kV Line
 - Butterfield-San Rafael 230 kV Line
 - Kartchner 115/69 kV Transformer
 - Vail-Fort Huachuca 138 kV Line

Executive Summary, cont.

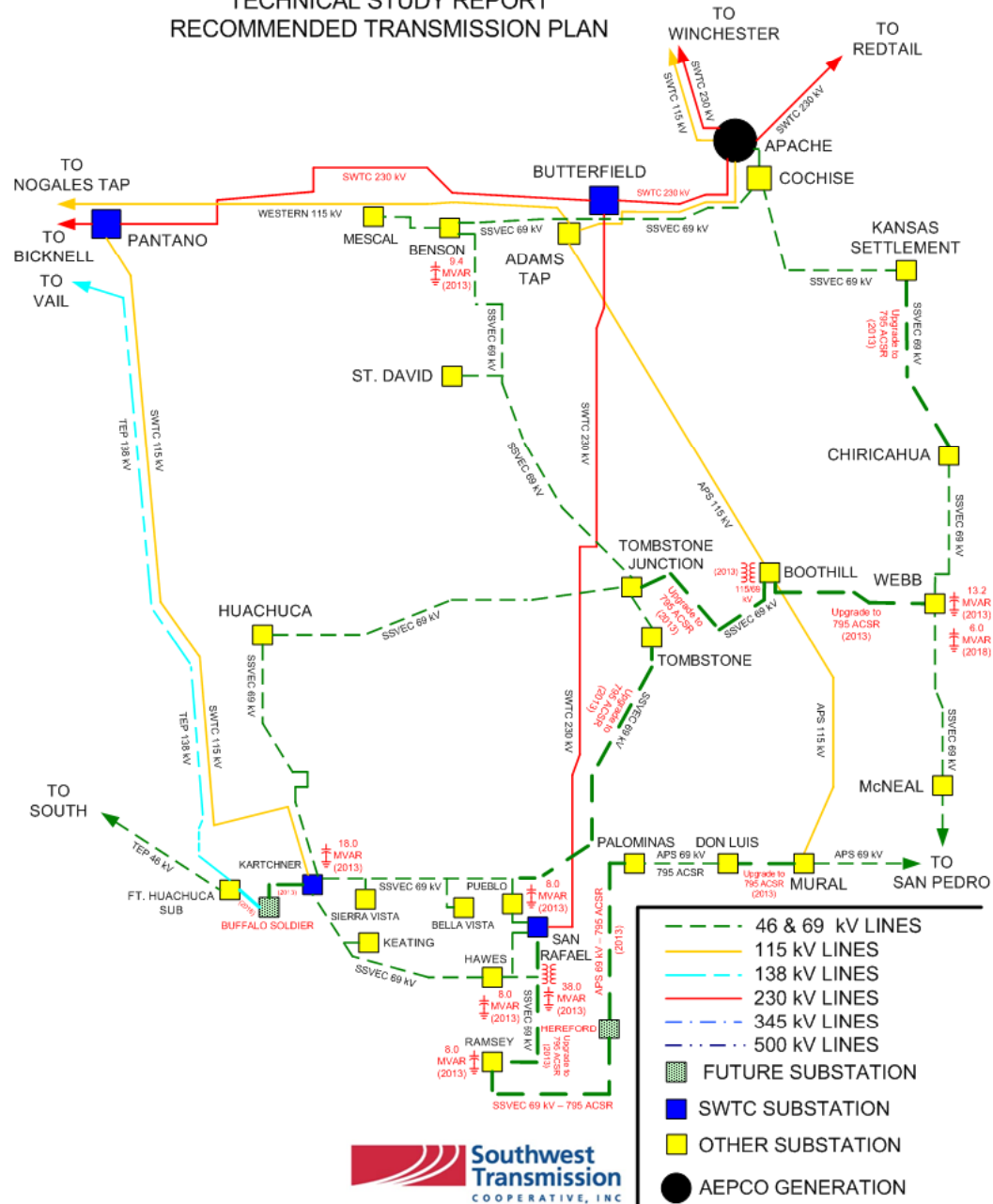
- The recommended plan below is expected to provide continuity of service well beyond the 2018 time frame and to serve about 380 MW within the area:
 - New APS Palominas – SSVEC Hereford 69 kV line
 - Proposed 50 MVA 115/69 kV transformer at Boothill
 - Loop Webb – Tombstone Jct. 69 kV line through Boothill
 - Proposed Fort Huachuca 138 kV – Buffalo Soldier 69 kV tie (needed in year 2018)
 - Operate the following normally open circuits as normally closed:
 - Charleston – Bella Vista 69 kV Line
 - Keating Junction – Hawes 69 kV Line
 - McNeal – San Pedro 69 kV Line
 - Install shunt capacitors at the following substations:
 - 13.2 MVAR at Webb 69 kV Substation
 - 8 MVAR at Ramsey, Hawes, and Pueblo 69 kV Substations
 - 6 MVAR at Webb 69 kV Substation (needed in year 2018)

Power Flow Models

- Developed for 2013 and 2018
- Models were updated to include 10 planned transmission related projects in Cochise County prior to the summer of 2013:
 - Upgrade of Webb – Tombstone Jct. 69 kV Line (795 ACSR)
 - Upgrade of Tombstone – Charleston Jct. 69 kV Line (795 ACSR)
 - Upgrade of Kansas – Chiricahua 69 kV Line (795 ACSR)
 - Upgrade of Mural – Don Luis 69 kV Line (795 ACSR)
 - Upgrade of San Rafael – Ramsey 69 kV Line (795 ACSR)
 - Proposed Kartchner – Buffalo Soldier 69 kV Tie
 - Installation of a second 230/69 kV transformer at San Rafael
 - Installation of 9.4 MVAR shunt capacitor at Benson 69 kV Substation
 - Installation of 38 MVAR shunt capacitor at San Rafael 230 kV Substation
 - Installation of 18 MVAR shunt capacitor at Kartchner 69 kV Substation



COCHISE COUNTY STUDY GROUP TECHNICAL STUDY REPORT RECOMMENDED TRANSMISSION PLAN

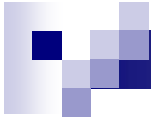


CCSG Next Steps

- Development of a Facilities Study
 - Key issue as the system was not constructed or contractually prepared to operate in a normally-closed configuration.
 - Examine physical and electrical requirements of recommended plan, as well as indicative costs and schedule to complete the plan.
- Development of Applicable Agreements
 - Will be complex in order to accomplish recommended plan.
 - Examples of agreements include, but are not limited to: cost responsibility, wheeling arrangements, EPC, O&M, load-serving, etc. These will take time to execute due to complexities in acquiring approvals from governing boards, ACC, RUS, and/or FERC.

CCSG Next Steps, cont.

- Participants intend to continue work in 2010 on technical details, cost sharing, and contractual details under the assumption that the ACC will approve the technical plan as submitted.
- Another key issue for Group will be how to implement recommended solution given economic downturn that has occurred after the 2009 Report.



**CCSG Participants Request
Questions be in Writing to the
Group.**



Questions?

