

**Final SATS Meeting Notes
Holiday Inn, Tucson Airport North
June 4, 2009**

Attendees:

Vincent Thor, APS
Estit Ramirez, APS
Mike Gazda, APA
Jim Tang, CAP
Reuben Ruiz, CAP
Randy Etheridge, Acciona
EvaMarie King, SWTC
Bruce Evans, SWTC
Jim Rein, SWTC
Gary Trent, TEP
Bobby Chavez, TEP
Kathy Estrada, TEP
Laura Pinnas, TEP
Josh Johnston, Western
Jim Charters, WSES
Suzanne James-King, 3M
Ken Bagley, Genesee/SSVEC
Cindy Bailey, SunZia/SWPG
Mark Etherton, PDS/SunZia
Don Stoneberger, FMI
Gary Romero, SPPR

Agenda Items:

1) Welcome and Introductions

Gary Trent welcomed everyone to the Holiday Inn and asked for introductions.

2) Review Agenda

At the request of others, Gary added the following sub-items to Agenda Item 11)

Additional Items:

“11a. Update on status of APA / Western upgrades.”

“11b. SunZia Project update.”

Bruce mentioned that it had been decided at a previous meeting that an update to the SunZia Project would be a standing agenda item.

3) Review/Approve 4/2/09 Meeting Notes

The draft April 2nd Meeting Notes were approved as written and Bruce will resend them as final to the group next week.

4) Review Action Items from 4/2/09 Meeting

- a. Cochise County Study funding entities to provide comments on Study Scope and Letter Agreement to Ken Bagley – done.
- b. Ron Belval to forward TEP/SWTC SOI to Western to SSVEC and Acciona – done.
- c. Joe Herrera to provide CATS-HV Transmission Corridor Workshop agenda to Bruce for distribution to SATS group – done.
- d. Gary Trent to distribute CATS-HV 2019 case to SATS members for comments – done.
- e. Gary Trent to check on distributing SOI's to entire SATS membership – done.
- f. Bruce Evans to arrange location for Joint SWTC/TEP 2nd Quarter Stakeholder Meeting on June 4th – done.

5) SWAT Oversight Summary

The following is a simplified listing of the approval and action items from the SWAT Oversight Committee Meeting (which were reviewed by Gary at the meeting and subsequently sent to the SWAT membership in an e-mail from Rob Kondziolka on May 26th):

Approval of the following items:

- The Common Corridor Task Force White Paper on Structure Separation for Transmission Lines in Common Corridors with caveat that the published version add in the conclusions that the structure separation should be evaluated on a case-by-case basis. (The White Paper will be docketed with the ACC. Copies of the White Paper and other reports that were given at the meeting can be found at: www.westconnect.com/planning.php. Once at this site, go to SWAT, and click on "Reports" under Supporting Documentation.)
- The SWAT Charter (5th Draft dated 5-17-09) with three edits proposed at the meeting. The three minor edits were to Purpose, Principles/Shared Workload, and Organization/Work Groups. The Charter was also approved with the condition that a new section that identifies how the charter will be amended. The new section is to be added by the joint meeting with SSPG and CCPG. The Charter was approved by those present except one no vote and one abstention.

Development of the following action items:

- The New Mexico Subcommittee will develop a draft study proposal for a New Mexico collector system that can be integrated with proposed major projects.

Action assigned to Tom Duane and Mark Etherton. Action due by SWAT August meeting.

- SWAT will offer to coordinate an El Dorado Study group with transmission project proponents terminating in the El Dorado Valley area of Southern Nevada. Action assigned to Ken Bagley and Rob Kondziolka. Action due by SWAT August meeting.
- SWAT will submit comments on FERC NOPR that includes MOD-029. A draft will be issued by Friday May 22, and final comments submitted by May 26. Action assigned to LeeAnn Torkelson and Rob Kondziolka.

6) SATS 2009 Study Plan Review

Items below in red indicate completion or action taken today of the Plan elements:

- a. Present plan and subsequent findings to SWAT, WestConnect and to local stakeholders
 - December 5, 2008 SATS Conference Call
 - January 13, 2009 SWAT Meeting
 - Study Plan Complete
- b. Revise load forecasts
 - TEP load forecast was revised in February 2009
 - Complete. With receipt of the new forecasted loads, headway is being made on the studies that are being performed by TEP and SWTC.
- c. Engage SATS in early case building to ensure accuracy of database for 2009 ten year planning cases:
 - Focus on Arizona ten year planning to include cases for years 1 through 5 plus year ten;
 - Preparation for ACC ten year plans, RMR, BTA and compliance studies;
 - Provide support and documentation to other regulatory agencies such as FERC and Rural Utility Services (RUS)
 - Agenda item #8
- d. Investigate implications of increased FMI loads in SATS study footprint:
 - Seek input from, and participation by FMI, to address their anticipated plant expansion.
 - FMI has nothing to discuss due to the economic downturn.
- e. Investigate alternative configurations to mitigate high flows on the Winchester 345/230 kV transformer, Apache-Bicknell 230 kV line and 230/345 kV Bicknell transformer caused by EHV system contingencies.
- f. Develop and evaluate alternatives to the two joint Tortolita-North Loop 345 kV proposal based on the SPPR Three Terminal Proposal;
- g. Investigate impact of SunZia in coordination with CATS EHV, NM, SWAT RTTF and other entities;
- h. Develop and evaluate alternatives for joint SWTC/TEP substation(s) to supply TEP/Trico loads south of Tucson;
- i. Continue Cochise County planning in an effort to comply with ACC recommendations;
 - Agenda item #10

- j. May conduct studies to accommodate renewable projects;
- k. Complete capital cost estimates and economic analysis, including losses;
- l. Identify potential projects;
- m. Conduct Scenario Sensitivity analysis, such as Load Forecast, Efficiency, Local Renewable Resources, Local & Distributed Generation, and location of external resources

7) Western RFI/SOI Update

Josh Johnston stated that he did not have anything to report on the progress that Western is making on selecting projects out of the many Statements of Interest (SOI) that were received. A customer meeting will be held on June 11th that will likely provide an update on the process. Jim Rein noted that a meeting was held last week at Western's offices where this was discussed, but that due to confidentiality issues he was not at liberty to divulge the information given at the meeting. Josh noted that there will also be a meeting on June 23rd for those entities that signed SOI's, but that he had no details regarding it.

8) Power Flow Case Development Status

- 2010-2014 and 2019 Heavy Summer Cases
- SATS Cases
 - All power flow cases are finalized and distributed
 - 2010 HS case developed from WECC 09HS3a
 - 2011-2014 HS cases develop from Cochise County 2013 case
 - 2019 – SATS comments incorporated into the CATS-HV 2019 case. Case has been distributed by CATS-HV group.

As noted above, all of the cases are now complete (2010-2019) and have been distributed to the group. Gary has been working on a flat-line solution for the cases for transient stability study work but found that he had to make some adjustments to the cases. The base swing machine was out of limits, which was fixed and other swing machines were also out of limits. There is plenty of generation in the cases to allow these fixes to be made.

9) Study Update

TEP presented findings from the 2012 study footprint and discussed the following problems:

TEP 2012 LSC Issues

- TEP load shed scheme can not unload the following overloads
 - Apache – Butterfield 230kV Circuit (924A, 368MVA) **120.7% loaded**
 - Butterfield – Pantano 230kV Circuit (924A, 368MVA) **103.8% loaded**
 - Apache – Adams 115kV Circuit [Wapa] (552.25A, 110MVA) **91.2% loaded**

- Rillito – North East 138kV Circuit (1574A, 370MVA) 95% loaded
- Delta-V Violations
 - Kartchner 115kV 10.10%

The proposed Bowie generation project was not in-service in this case. TEP would like to discuss a short-term solution to the Apache – Butterfield 230 kV line overload since it is not scheduled for upgrade until 2014.

TEP 2012 LSC ‘issues’ with Bicknell Xfmr Trip

- 140 MW of TEP load shed for solution
- Apache – Butterfield 230kV Circuit (924A, 368MVA) 62% loaded
- Butterfield – Pantano 230kV Circuit (924A, 368MVA) 45.8% loaded
- Apache – Adams 115kV Circuit [Wapa] (552.25A, 120MVA) 97% loaded
- **Rillito to North East 138kV Circuit (1574A, 370MVA) 112% loaded**
- Pinal West 500/345kV Xfmr (806MVA) 96.6% loaded
- Pinal West – South 345kV Circuit (1857MVA, 1110 MVA) 90.3% loaded

Outaging the Bicknell 345/230 kV transformer requires 140 MW of TEP load shed. As can be seen, it really overloads the Rillito to North East 138 kV circuit. However, TEP needs to do more investigation in potential solutions. Mark asked about opening the Winchester transformer instead of the Bicknell transformer as a possible solution. Bobby stated that this would likely still overload the Apache – Butterfield 230 kV line and that it is not feasible to try and shed more TEP load. TEP accepted an action item to look at this potential solution.

Other solutions that were discussed were to break the SWTC 115 kV system at Avra. However, since the SWTC 115 kV system will be a parallel path with the CAP 115 kV system by 2012, this may not work.

Western Circuit Descriptions

- Apache – Adams 115kV Circuit
 - Wound CT (100MVA[500A] => 200MVA [1000A])
 - Disconnect switch (120MVA[600A])
 - Bushing CTs (120MVA[600A] => 239MVA[1200A])
 - Conductor 795 ACSR (172/217.3 MVA)
- Saguaro – Marana 115 kV Circuit
 - Disconnect switch (120MVA)
 - Wound CT (120MVA[600A] => 159MVA[800A])
 - Bushing CTs (120MVA[600A] => 239MVA[1200A])
 - Wave Trap (159MVA[800A])
 - Conductor 795 ACSR (172/192.5 MVA)

Bruce pointed out that the Wave Trap for the Saguaro to Marana 115 kV line does not exist. He also pointed out that there are efforts underway now between APS and Western

to remove the limitations on the Saguaro to Marana circuit. This work is scheduled to be completed by September.

A suggestion was given to Western to look at getting these small ticket items into their budgets as soon as possible.

Josh pointed out that the issues on the Adam's line is mostly due to the disconnect switches. A suggestion was offered to contact APS about potential solutions at Adams.

SWTC did not have a presentation for today's meeting and accepted an action item to provide an update on their study efforts at the next SATS Meeting.

10) Cochise County Study Update

A Study Scope and Letter Agreement were approved by the group and PDS Consulting was awarded the contract to do the study work. The four funding entities are APS, SSVEC, SWTC and TEP.

A draft of the study results is expected at the end of this month and will be discussed at the June 30th meeting. A definition of "continuity of service" will also be discussed at the June 30th meeting. Suggestions for a definition have been provided by SWTC and TEP, but there is no consensus yet. TEP had suggested using an existing ACC definition for continuity of service. One definition the group is discussing, is that there be no interruption of service for N-1 on the HV system in the county. TEP noted that they will be watching the outcome of this study effort as UNSE is looking for a definition of continuity of service as it regards service to Nogales in Santa Cruz County.

There will be a conference call of the Technical Study Group on June 11th at 3:00 p.m. to discuss the status of the PDS study work.

11) Additional Items

- a. Update on status of APA / Western upgrades. Mike Gazda briefly explained that a suggestion had been made by SPPR to have the Arizona Power Authority (APA) work with Western to upgrade the 115 kV system that was proposed in the SPPR 3 Terminal Plan. Contract terms to make this happen are being worked on. However, APA is desirous of more upgrades to the Western system than the upgrades solely proposed by SPPR. These include upgrading the 161 kV system south of Parker to 230 kV, along with an upgrade of the Western 115 kV system from Coolidge to Apache. The plan for the upgrade of the 115 kV facilities for the 3 Terminal Plan will be to build double-circuit structures with 230kV construction operated at 115 kV on one side and operated at 230 kV on the other. There is also a potential of other projects to be considered, such as 345 kV, in the same ROW.

Mike requested that anyone having suggestions or ideas for modifications or enhancements to the proposed upgrades or projects to contact the APA. Ken asked Mike to clarify APA's position to work with Western on other projects outside of SPPR. Mike replied that APA is looking at everything in Western's 10 year plans. He also stated that Western is looking for stimulus money for these projects, but if they are unable to get these funds, then APA will work with Western to construct the projects.

- b. SunZia Project Update. Mark reported on two milestones for Sunzia:
 1. Completion of the Comprehensive Progress Report (CPR). Sunzia will now enter phase 2 of the WECC Process. A static Var compensation plan has been developed for the eastern portion of the SunZia Project. As has been noted in the past, the plan is to bring two circuits into Pinal Central, with one going into Tortolita. The plan for a DC line is not addressed in the CPR. If it does become a viable option, it will have to be re-studied.
 2. A Notice of Intent for the project was put into the Federal Register on May 29th. The project will now go through a 40-day scoping period with 9 public meetings planned – 5 in New Mexico and 4 in Arizona. BLM will be hosting these meetings. This will start the process for the EIS, which should take about a year to complete.

Line compensation on various segments of the SunZia Southwest Transmission Line are as follows:

- Pinal Central to Willow – 50%
- Willow to Luna – 50%
- Luna to East – 70%

A newsletter for the SunZia Southwest Transmission Project was recently produced and is available on the BLM website. Mark will try and get a link established on the SunZia website to access the flyer.

Acciona was given an opportunity to provide an update, but had nothing to report.

12) Review of Action Items

- a. EvaMarie to provide an update to SWTC study efforts at the next SATS Meeting.
- b. The 2012 study will consider Mark's suggestion of opening Winchester under the double 345 kV outage.

13) Next Meeting Agenda

- Review/Approve Meeting Notes
- Study Update
 - TEP

- SWTC
- Cochise County Update
- Western RFI/SOI Update
- Date/Location of next meeting

14) Next Steps/Meeting(s)

The next meeting will be held August 6th at TEP's offices.