



CATS HV Study Group

Monday October 22, 2007

Approved Meeting Notes

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CATS HV

1. Introductions and Meeting Purpose

The meeting was called to order by chairman Joseph Herrera. A list of those in attendance is attached. The proposed agenda was accepted by those in attendance. A brief overview of the previous meeting was given.

Josh Johnston sent an e-mail to Joseph Herrera stated that he approves of the addendum to the CATS HV 2018 Study Plan.

2. Western 230kV Up grades to CATS HV 2016 (KRSA)

Mike Powell of K.R.Saline and Associates provided a presentation of the CATSHV Study Report Addendum. A copy of the presentation is attached. The latest study work focused on two tasks: 1) Test the affects of the WAPA conductor upgrades and Voltage Profile adjustments to the Load Growth cases in the study area (Voltage Deviations, Thermal Overloads) 2) Provide a written report detailing the affects of the WAPA upgrades on the voltage and thermal issues in the study area with conclusions to serve as an addendum to the approved Final CATSHV report.

WAPA chose the 954 ACSS conductor, operating at 115 kV for the revised analysis. The Voltage Profile was askew on the original base case, so an adjusted case was done. All distances for the map and impedance calculations were provided by Josh Johnston.

With the Western system conductor upgrades, the potential load increase up to 500 MW of load growth (beyond the 2016 level) was obtained. The conductor upgrades were tested through 800 MW of incremental load with no thermal issues. It was concluded that the conductor upgrades does provide adequate transmission capacity beyond 2016 even operated at 115kV. If Western completes all of the conductor upgrades as planned, the expected load level plus 500 MW of load growth will be available.

Mark Etherton, for ED3, questioned why all of the Western lines were upgraded (even Coolidge south) instead of just the Western Casa Grande-Empire-ED5-Saguaro segment where the loading issues were noted in the original analysis. The upgrades were based on the previous meeting was to upgrade the all of the CATS HV Western segments, from Casa Grande all the way back around to Coolidge. The only thermal overloads noted in the base case were in the area of Casa Grande, Thornton and Empire. Joe Herrera, ED3, suggested considering operating at 230 kV for the next study. Mark also mentioned that a short 230kV tie between the Western Casa Grande and APS Casa Grande may also provide support for the overloads and voltage violations rather than upgrading miles of conductor, this should be examined in more detail with the 2018 Study Plan.

Conclusions were written to show that minor voltage corrections and upgrading Western's conductor can provide additional capacity for several years.

Additional changes will be made to the Addendum (voltage provision should be at the +200MW level rather than +100MW (break point) and +500MW, rather than +600MW).

APS has done a new Load Forecast due to the fact that the entire system has experienced less Load demand than projected. System wide the load is 300 - 600 Megawatts less than the projected forecast. Pinal County is 50-100 Megawatts less... The Load forecast for 2016 is more accurate for 2018. All 10 year plans were based on last year's load forecast.

The CATS HV subcommittee approved the additional analysis with the changes noted for the conclusions. KRSA will incorporate the changes and resend to the group by Friday, October 26.

3. Study Plan

a) Background

In the previous meeting it was decided that ED3, SRP and APS would examine potential generation resource additions to serve regional loads and potential expansion of existing generation sites. The load serving entities will be modeling their individual detailed plans into the CATS HV 2018 Study Case. ED2, SCIP, ED3, etc. will also be incorporated in the analysis, in order to provide a coordinated transmission plan for the region.

b) TASK 1

First Bullet - Detailed subtransmission systems will be presented at the next CATS HV meeting. The 2018 West Connect coordinated case will be done at the beginning of 2008. All entities are working on a current 10 year plan. Discussion of the plan will be included in the next meetings agenda.

Second Bullet - any additional generation resources to be imported from outside the CATS HV.

Third Bullet - The final report will not be done until the generation resources inside the area have been reviewed (Task 2). Incorporating all of the analysis will be added to the Study Plan as "Task 3" and done following "Task 2" is finished. Jason Spitzkoff of APS suggested that the CATS HV Group should do more high level studies (i.e. no duplication of analysis to be conducted by individual transmission owners). The West Connect Coordinated Case will be added along with more details on what is to be done.

c) TASK 2

The purpose of "Task 2" is to review the potential impact on the CATS system with potential generation resource additions, utilizing the benchmark case developed in "Task 1."

First Bullet - Details will be presented at the next CATS HV meeting. Resources will be discussed, looking at potential zones and keeping the Study "generic". Potential locations for injection points were discussed. Injection points will be selected to check varying levels. Potential injection points are Pinal West, Santa Rosa, Desert basin, Sundance, Saguaro, Pinal South, Empire and Randolph. A matrix will be developed to show possible combinations of injection locations, potentially in 400MW blocks.

Leila DaMaree of the City of Casa Grande asked about the ROW widths for the SEV line. The ROW is ninety (90) feet wide from Pinal West to Santa Rosa, and one hundred thirty (130) feet wide from Santa Rosa to Pinal South and all around the perimeter.

Second Bullet - it was decided that the assessment review for the new generation resources will be finalized at the next CATS HV meeting.

Third Bullet – Results for this local generation resource assessment will be compared to the assessment from the “Task 1” study scope. Jason Spitzkoff of APS, is going to revive the old CATS HV study and look at the system as a 2018 baseline existing HV system.

Other planning groups are looking at possibilities for renewable energy west of Palo Verde. Pinal County also has a lot of renewable possibilities. The HV Study Plan will mention generic renewable resources as being delivered rather than interconnecting. The renewables would be considered a negative load impact.

The City of Casa Grande is starting to update their General Plan, which may be finalized by early 2009. This would be a good time to integrate the output of the CATS study with Casa Grande’s General Plan. Will definitely need corridors. This will allow the City of Casa Grande to identify where potential electric facilities and corridors will be in the future. Leila DeMaree asked what the restrictions are in the 130’ ROW. Generally, anything that doesn’t impact maintenance of lines and poles is allowed. The City of Casa Grande will share their Trail Study with the CATS group when it is finished.

Fourth Bullet – The last bullet of “Task 2” will be incorporated in “Task 3.”

Regarding renewable energies, the topic of self-generation has not come up in this area.

Black start capabilities need to be looked at for this area. It may be beneficial to do a separate study in regards to Black Start capabilities in this area due to the fact that it is a radial system.

d) Timeline

The 2008 CATS HV transmission planning must be initiated no later than the end of the first quarter of 2008. The Draft Report will be due by August 31st, 2008. The Final Report will be due by October 31st. The 2017 Study case will be used if the 2018 Case is not available. The 2018 Study Case is projected to be completed by January 2008. Coordination of the Study Cases will be included in the RFP. Gary will send out the Cases simultaneously and all changes will be sent back to one person.

Comments for the 2018 Study Plan must be submitted by end of this week, so that they can be available next week for a vote. The document will then be submitted to the ACC as an appendix of the original report. APS will file the report with the ACC. Joe Herrera will send an e-mail reminder today.

All members present are in favor of the changes to the CATS HV 2018 Study Plan.

4. Open Discussion

Gary Romero will make the presentation at the SWAT meeting. Any comments on the Study Plan must be submitted to Gary by the end of this week.

5. Next meeting?

The next CATS HV Study Group meeting will take place on December 3rd. The primary purpose of the meeting will be to go over the details of what will be studied next year; and to present the 10 year plans as a dry run for the subtransmission study.