



CATS HV Study Group

Monday December 1, 2008

9:00-12:00

Location: ED3 District Office

Agenda & Meeting Notes

Meeting called by: CATS HV Study Chairman
Purpose: Status of 2008 Study and Discuss CATS HV 2009 Study Plan

----- Agenda and Notes -----

CATS HV **9:00-12:00**

1. Introductions and Meeting Purpose

The meeting was called to order by Mark Etherton. A list of those in attendance is attached. Mark reviewed the two primary agenda items as: 1) Status of the 2008 CATS HV Study and 2) Discussion of 2009 Study Plan. Those in attendance accepted the proposed agenda. Mark provided a PowerPoint presentation as an outline for the discussion.

2. Discussion of Changes During 2008

It was discussed that there has been several revisions to the load forecasts due to the changing economy. The forecasted loads have been decreasing on a regular basis and projects are being delayed. There have also been several interconnection requests, both thermal and renewable, to APS, SRP, and Western across the CATS HV footprint that has delayed the development of the base cases required for the 2008 Study Plan. Ultimately, this also delayed the distribution of the WECC 2018 case.

3. Base Case Development

Bullet Point 2: The CATS HV Base Case did include the detailed 69kV representation for ED2, ED3, SWTCo, and APS Casa Grande/ Coolidge. Each line segment in the area was examined one at a time and screened for overloads and violations.

Bullet Point 3: The case also included the proposed SPPR transmission upgrades and generation resource addition in southern Pinal County. The "three-terminal" plan included the rebuilding of several Western Area Power Administration lines in the area to double circuit 230kV and 115kV. The new 115kV lines would be reconducted (same as the 230kV conductor to balance the construction of the double circuit structures) but still operated at 115kV. However, the new TEP 345kV from Saguaro towards Marana was not modeled.

Bullet Point 4: Includes SRP Coolidge (Randolph) and Pinal Central Generation:

SRP new generation was included, including new combined cycle facility at Pinal Central at 1000 MW of generation.

4. Contingency Assessment (Task 1 of the 2008 Study Plan)

The Task 1 Assessment included N-0, N-1 and N-2 Outages (CATS HV Area Only, lines, transformers, and generating units) included all 69kV lines in the area.

5. Task 1: Preliminary Findings

Bullet Point 1: No N-0 Overloads were found in the CATS HV area. It was discussed that this could be because the loads in the area are down and planned 230kV facilities.

Bullet Point 2: N-1 Overloads

Some N-1 overloads were discussed, including:

-Casa Grande (APS_ 230-69 kV at 113% (100MVA) for loss of Milligan 230/69 kV. Jason from APS said that there emergency rating is 120% so this number is well within that rating.

-Casa Grande – SE8 69kV line at 100% (107MVA) for loss of Milligan 230/ 69 kV.

- Multiple SATS area overloads. After this point was brought up, Bruce Evans asked how many of these overloads were from Saguaro to Marana? Western would like to resolve as many of these issues as possible. Mark will send out the complete list following the meeting.

Bullet Point 3: Voltage Deviation Violations

-Valley Farms, Merrill, SE5 at 12% delta V for loss of Coolidge-Valley Farms 115 kV. It was discussed that this area is currently handling a large load. Power Factor correction for this area will be examined in more detail as the loads develop.

Bullet Point 4: N-1 Voltage Magnitude Violations

-Valley Farms, Merrill, SE5 at .088-.90 p.u. for loss of Coolidge – Valley Farms 115 kV
There is not a lot of power factor correction included in these numbers. Also, it should be included in the final report that these problems will be corrected before the 2018 timeline.

Bullet Point 5: N-2 Overloads (Other than N-1 Overloads)

-Some “No Solution” for Casa Grande area 69 kV N-2

The model did not solve for the no solution. Mark Etherton asked Gary Romero of KR Saline if it was required to include N-2 in the Westconnect study. Gary's' response was that it is not required for capital improvements. However, if it is identified all mitigation must also be included. The 69kV problems need to be screened out as well as the mitigation as this should apply to 100kV lines and above. The challenge is what to include in the report.

Mark Etherton will be distributing the spreadsheet for review of the N-0, N-1, limited N-2 and mitigation.

6. Resource Injections (Task 2 for the 2008 CATS HV Study Plan)

The current base case has additional generation already modeled at Randolph, Pinal Central and Empire substations and were part of the original resource injection lists. There was also some discussion of the amount of renewable generation interconnection requests for the CATS HV area. Instead of documenting all of the combinations, it was decided to only include six resource scenarios for the Task 2 assessment (N-0 and N-1 only): Sundance, Desert Basin, Pinal West, Pinal Central (1000MW), San Manuel and Saguaro.

Pinal County Discussions

Dennis Rittenback (Pinal County) brought up the newest railroad project that is being brought to the county for approval near the Picacho area. He stated that it is going to include a major switching yard and ancillary equipment and a significant load for this area. Mark added that there were limited transmission lines to serve that project at this time.

Pinal County is currently reviewing the second draft of the Comprehensive Plan amendment and it is in its second 60-day review. Dennis encouraged all attendees to log on and review the document and voice any problems they may have. All comments are due on or before **December 22, 2008**. This is a revised document but Dennis said that when reviewed it looks like an entirely new document. Mark said that he would extract the Energy portion and distribute it to the CATS HV Distribution list.

7. 2009 Study Plan Discussion

Bullet Point 1: SWAT 2019 Base Case



The question was raised should CATS HV do a 2019 case and if so what should be included? It may not need to be done, depending on when the project deadline falls it might be possible to firm up generation plans for APS. The planned completion date for the KR Saline and Westconnect project is in the first quarter of 2009. It was concluded that a simple assessment would need to be done as minor changes will be made to the 2019 base case.

Additional Pinal County development discussions

Dennis from the County stated that he has only had two housing development plats went to their Board in the year of 2008. With the foreclosure inventory, it is not looking good for the future. Some developments are looking to develop renewable energy parks for their development.

Dennis also requested that the transmission planning entities lay out their long term transmission plans and then provide them to the County in a common GIS based map. The current city of Casa Grande long-term plans do not include utility corridors. This problem needs to be addressed in the CATS HV area. The County land use plan needs to include this as well. There needs to be more communication with the local jurisdictions. As an example, Pinal Central is eventually going to be a major hub with several 500kV and 230kV lines going in and out. This is something that needs to be addressed with the local jurisdictions. All CATS HV participating utilities should get a map of all planned lines and infrastructure to their local jurisdictions for future planning. It was concluded that this would be completed as part of the 2009 CATS HV Study Plan.

Next Steps:

The next meeting will be held January 06, 2008 at the ED3 District Office. A draft of the final report will be completed before the next meeting. In addition, there will be further discussion about what to include in the 2009 study. The 2008 Study and the 2009 CATS HV Study Plan will have to be presented and approved at the SWAT and WestConnect meetings on January 13 and 14, 2009.

