

**Response of the California Transmission Planning Group
Technical Steering Committee Study Team**

**Metropolitan Water District of Southern California
Re CTPG's draft Phase 1 Study Report**

Comment Received:

On pages 44, 45 and 47, the CTPG study indicates overloads on JHindSCE-JHindsMWD in Case B2 and Case B2 without GPNP as 121 percent and 130 percent. The recommended mitigation was to add a second conductor or reconductoring. Any description of mitigations for overloads on this line segment between SCE and MWD's JHinds buses need to be corrected in the report since there is an SCE-owned flow-based SPS planned to prevent overloads on the District's system should flows exceed 340 MVA. Please contact Southern California Edison for details as they are the owner of this SPS which will be configured in spring/summer 2010.

CTPG Study Team Response

The report has been updated to reflect this comment. The SPS will be represented in Phase 2 studies.

Comment Received:

At page 59, the District has a concern regarding the description that reactive support in Southern California Edison's 230-kV system listed post-transient deficiencies at Coachella due to replacement of steam generation with renewables, which causes the 230-KV system to suffer voltage deterioration. With the loop in of the Coachella-Devers into Mirage creating a Mirage - Devers 230-kV line #2, the District would like to know how this affects the voltages at Mirage and the District's Hinds, Eagle Mountain and Iron Mountain 230-kV buses.

CTPG Study Team Response

As a clarification, the Phase 1 report indicates that voltage deterioration occurred under steady-state voltages. During the Phase 1 study, the loop-in of the Coachella-Devers line into Mirage was part of the base case. CTPG did not study a sensitivity to compare the voltages without the Coachella-Devers loop-in and is unable to indicate how that addition affects the voltages for better or worse. However, none of the buses in question exceeded criteria with respect to post-transient deviations. The report is only trying to make note of the potential need for additional reactive resources if future 2020 renewable generation dispatch resembles the assumptions made in the case.

Comment Received

Has CTPG reduced or scaled down the MWD pumploads? The five pumping plant buses (JHinds, Eagle Mountain, Iron Mountain, Gene, and Intake) should represent an eight pump flow of around 288 megawatts. This would represent roughly 2600 gigawatt-hours per year rather than the 1507 gigawatt-hours per year mentioned on page 21 of the report. It would be important for voltage studies to represent conditions where the District pump loads were at maximum pump or where those loads were at minimum or zero. Running a sensitivity case with each of the five District pumps outputting zero megawatts would ensure no overloads, especially on the Southern California Edison system west of JHindsSCE.

CTPG Study Team Response

The peak cases represent 281.6 megawatts of pump flow at the five pumping buses. No sensitivity was performed for Phase 1, but this can be proposed to be included for Phase 2 or Phase 3 studies. However, the overloads on the Southern California Edison system West of Julian Hinds in the peak cases are due largely to the generation at Blythe. The SPS limiting the flow on the Julian Hinds sectionalizing breaker would reduce generation dispatch if levels began to exceed the limits of the breaker.

Comment Received

At page 35, the Phase 1 study shows that the Etiwanda 66-230-kV transformer is overloaded. What is the Etiwanda MWD generating unit modeled in the cases? This is a renewable (RPS) small conduit hydro that can peak to 23 megawatts at summer on-peak and three megawatts at summer off-peak and typically is at zero megawatts from November to May.

CTPG Study Team Response

The C Cases (1-in-2) model Etiwanda MWD at three megawatts. Cases A and B model Etiwanda MWD at fifteen megawatts. Although the 102-percent overload is mitigated by full dispatch of the Etiwanda MWD small hydro generator, the overload is not of concern due to the planned addition by Southern California Edison of an additional transformer due to load growth in the area before 2020. The transformer was not modeled due to its current status in approval and permitting processes.