

Meeting Agenda
Southwest Transmission Expansion Plan (STEP)

December 10, 2003
Sempra Energy Building, Main Auditorium
101 Ash St, San Diego, CA
10:00 a.m. to 3:00 p.m.
Call-in number: 877-670-4099 (Passcode: 925206)

1. Welcome, introductions, meeting goals – Harlow Peterson/Armie Perez
2. Update on the activities of the Seams Steering Group – Western Interconnection – Planning Work Group - Harlow Peterson
3. Status of the sub-group to develop the initial upgrades (6 series capacitor upgrades and a second Devers 500/230 kV transformer) – Bob Smith
4. Status of the sub-group to develop a new line from Arizona to California – Jim Charters
5. Update on Harquahala-Devers Project – Pat Mayfield
6. Status of the sub-group developing a new line into San Diego – Kishore Patel
7. Updated technical and economic study results – Johan Galleberg, Mohamed Awad, and/or Irina Green
8. Review of first annual STEP report – Johan Galleberg
9. Five minute status reports on related studies and projects
 - Central Arizona Transmission Study (CATS) – Harlow Peterson
 - Western Arizona Transmission Studies (WATS) – Brian Keel
 - US/Mexico border 2006 studies and preliminary findings – Kishore Patel
 - Path 49 upgrades and status of phase 2 study work – Kishore Patel
 - Status of San Diego area generation additions – Kishore Patel
 - Status of Los Angeles area generation additions – Pat Mayfield
10. Member comments
11. Review action items and assignments
12. Next meeting – Proposed for January 20th in Las Vegas or Phoenix.
13. Next meeting agenda Topics

STEP Transmission Plan

Initially, 26 alternatives were considered in the STEP Screening Study. From these, six alternatives were selected for more detailed studies. Those studies led to the following preferred sequence of upgrades. Additional studies are underway to further refine and develop these projects.

San Diego Upgrades (EOR rating unchanged at 7550 MW)

1. Miguel 500/230 kV #2, Imperial Valley-Miguel 500 kV Series Capacitor Upgrade, and Miguel-Mission 230 kV #2

Short-term Upgrades (EOR rating increased to 8300 MW)

1. Hassayampa-N. Gila-Imperial Valley Series Capacitor Upgrade, Palo Verde-Devers Series Capacitor Upgrade, and Devers 500/230 kV #2.
2. Small West of Devers Upgrade (install reactor in limiting line)
3. Navajo-Crystal and Moenkopi-Eldorado Series Capacitor Upgrade

New Line between Arizona and California (assumes completion of the short-term upgrades)(EOR rating increased to 9500 MW)

1. Rebuilding of the four 230 kV lines west of Devers.
2. New Harquahala-Devers 500 kV line
3. Connection of the Blythe #2 power plant to the Palo-Verde Devers 500 kV line
4. Addition of a new double circuit 230 kV line north out of Blythe to Parker Substation.

New Line into San Diego for Economic and Reliability Need (assumes completion of the short-term upgrades)

- Option 1) New Valley-Rainbow 500 kV line.
- Option 2) New Talega-Escondido-Valley/Serrano Line with or without the Lake Elsinore Advanced Pumped Storage project
- Option 3) New Imperial Valley-Rainbow 500 kV line
- Option 4) New Imperial Valley-Ramona 500 kV line
- Option 5) New Imperial Valley-East of Escondido 500 kV line
- Option 6) New Imperial Valley-Miguel 500 kV line.
- Option 7) New La Rosita-Tijuana 230 kV Double Circuit 230 kV line with 230 kV reinforcements as needed between Tijuana and Miguel and between La Rosita and Imperial Valley.

Updated STEP Action Items

1. Ongoing group leadership assignments:
 - a. Short-term Upgrades Work Group - Bob Smith
 - b. Arizona-California Line Work Group – Jim Charters
 - c. Imperial Valley-San Diego Line Work Group – Kishore Patel
 - d. Full STEP Group – Harlow Peterson, Armando Perez, and Jeff Miller.
2. Lead the drafting of the first Annual STEP Report (Johan Galleberg with assistance from others as needed). The report would document the current plan and would tie together all of the individual studies completed over the last year. The primary purpose of the report would be to clearly document the rationale and process STEP used in developing its current plan. To minimize the size of the report and to minimize the effort required to compile the report, the report would electronically link to the various work products on the STEP web site. A draft report will be presented to STEP at its December meeting.
3. Complete the stability studies for the new sequence of upgrades to determine the dynamic voltage support requirements (Irina Green) for the two major upgrade stages of the plan (Short-term upgrades, and new Arizona-California line).
Maximum EOR flows should be modeled as follows:
 - a. Short-term upgrades (assuming an 8300 MW EOR Rating): 8715 MW for single contingencies and 8508 MW for double contingencies. Utilize the SDG&E studies to the extent possible.
 - b. New Arizona-California 500 kV line (assuming a 9500 MW EOR rating): 9975 MW for single contingencies and 9738 MW for double contingencies. Utilize the SCE studies to the extent possible.
4. Determine the San Diego area import capability before and after the addition of a new line into San Diego. (Irina Green)
5. Conduct an economic sensitivity with just the LEAPS transmission line in service and a second sensitivity with both the LEAPS transmission line and the pumped storage plant in-service (Mohamed Awad). Include the effect that the leaps transmission line would have in increasing San Diego import capability.
6. Reassess the economic benefit of the Imperial Valley-San Diego line including the effect the new line would have on increasing San Diego Import Capability.
7. Determine how to calculate congestion rents by line owner with the ABB program and incorporate this into the output tables (Mohamed Awad).
8. Add a plot for total west of Devers path flow in future economic simulations (Mohamed).
9. Conduct an economic sensitivity with the Navajo Transmission Project modeled to determine whether this would eliminate the need to upgrade the Navajo-Crystal and Moenkopi-Eldorado series capacitors (Mohamed Awad).
10. Conduct an economic sensitivity with the Blythe #2 plant connected into the Palo Verde-Devers 500 kV line for the case with the initial upgrades and the small west of Devers upgrade. Repeat the sensitivity for the case with the Harquahala-Devers project in-service and the full West of Devers Upgrade (Mohamed Awad).