

Meeting Agenda – Revision 2
Southwest Transmission Expansion Plan (STEP)

December 8th, 2004
Sempra Energy Building, Main Auditorium
101 Ash St, San Diego, CA
10:00 a.m. to 3:00 p.m.

1. Welcome, introductions, meeting goals – Bob Smith/Peter Krzykos
2. Status on the implementation of the STEP Short-term Upgrades
 - Allocation and Contractual Issues – Bob Smith/Peter Krzykos
 - North Gila Series Capacitor – Bob Smith/Peter Krzykos
 - Palo Verde Devers Series Capacitors, Devers SVC, Devers 500/230 kV #2, and Devers Series Reactor (or alternative) – Steve Mavis/Dana Cabbell
 - Imperial Valley Series Capacitor Upgrade and Imperial Valley Phase Shifting Transformer – Linda Brown
 - WECC Rating Studies – Kishore Patel
3. SWAT/STEP Colorado River Transmission (CRT) Group Status– Ken Bagley
4. EOR 9000 Project Update – Jim Hsu
5. Palo Verde-Devers #2 Project Update – Steve Mavis/Dana Cabbell
- ~~6. Palo Verde-Devers #2 Economic Study Update – Anna Geevarghese~~
7. Update on STEP sub group comparing options for a new 500 kV line into San Diego – Linda Brown
8. Imperial Valley Study Group – Dave Olsen
9. Tehachapi Area Renewable Generation Export Transmission (TARGET) Project Update – Jeff Miller
10. Five minute status reports on related studies and projects
 - Seams Steering Group – Western Interconnection (SSG-WI) – Jeff Miller
 - Southwest Area Transmission (SWAT) – Rob Kondziolka
 - Western Arizona Transmission Studies (WATS) – Brian Keel
11. Status on meeting STEP 2004 Goals and STEP 2005 Goals – Jeff Miller

12. Review action items and assignments

13. Next meeting – Proposed for **January 19th** in San Diego.

Status of 2004 STEP Goals

STEP's primary mission is to coordinate transmission expansion plans in the STEP area. In addition, specific projects can be developed by STEP. The following list of goals are specific accomplishments that STEP will strive to achieve in addition to its basis mission of coordination.

First Quarter 2004

1. Agree on the allocation of capacity for short-term upgrades (*Status: Completed April 8, 2004*).
2. Agree on the criteria for determining the voltage support requirements for the short-term upgrades and develop a technical study plan to determine requirements. (*Status: Completed April 8, 2004*)
3. Agree on the short-term west of Devers project (reactor or reconductoring) - (*Status: SCE developing reactor alternative*)
4. Agree on the series capacitor ratings. (*Status: Completed April 27, 2004*)

Second Quarter of 2004

1. Reach agreement on the integration of the new line between Arizona and California with the underlying system that runs north and south along the Colorado River. (*Status: SWAT/STEP CRT needs to complete study first*)
2. Complete the economic, reliability, and preliminary routing assessments for the various options for a new line into San Diego. (*Status: SDG&E to initiate new study to complete this work*)
3. Invite voltage support equipment manufacturers to a STEP meeting to discuss available technologies, modeling in studies, and costs – (*Status: Completed April 8, 2004*)
4. Complete studies to determine voltage support requirements (*Status: Completed in October 2004*).
5. Agree on voltage support requirements for the STEP area (*Status: Completed in October 2004*).
6. Gain all the utility and ISO approvals that are necessary to proceed with the short-term upgrades – (*Status: Project approved by the California ISO at their June 18th, 2004 Board Meeting*)

Third Quarter of 2004

1. Order all equipment necessary to complete the short-term upgrades. (*Status: In process and planned to be completed by early 2005*)
2. Reach agreement on whether or not to proceed with a new line into San Diego, and if so, select the preferred option. (*Status: New STEP Study Group organized to move this project forward*)

7. Gain utility and ISO approvals necessary to proceed with a new line from Arizona to California. (*Status: Project scheduled to go before the California ISO Board at their December 3rd, 2004 Meeting*)
8. Agree on transmission economic assessment methodology (*Status: Work is underway via the California ISO and the CPUC. Once complete, it will be brought forward to STEP for review and comment. All STEP members have been invited to participate in the CPUC process*)
9. Develop study plan for long range STEP study (i.e., 10-20 years). (*Status: Waiting for SSG-WI to develop long-term production simulation base case*)

Fourth Quarter of 2004

1. Gain Utility and ISO approvals necessary to proceed with a new line into San Diego. (*Status: Moved to 2005*)
2. Begin development of the STEP long-range plan (10+ years) using SSG-WI updated databases. (*Status: Moved to 2005*)

Proposed 2005 STEP Goals

STEP's primary mission is to coordinate transmission expansion plans in the STEP area. In addition, specific projects can be developed by STEP. The following list of goals are specific accomplishments that STEP will strive to achieve in addition to its basis mission of coordination.

First Quarter 2005

1. Gain utility and ISO approvals necessary to proceed with a new line from Arizona to California. (*Status: Project scheduled to go before the California ISO Board at their January or February Meeting*)

Second Quarter of 2005

2. Complete ordering of equipment necessary to complete the short-term upgrades.
3. Complete the economic, reliability, and preliminary routing assessments for the various options for a new line into San Diego.

Third Quarter of 2004

4. Reach agreement on the integration of the new line between Arizona and California with the underlying system that runs north and south along the Colorado River. (*Status: SWAT/STEP CRT needs to complete study first*)
5. Reach agreement on whether or not to proceed with a new line into San Diego, and if so, select the preferred option.
6. Develop study plan for long range STEP study (i.e., 10-20 years).

Fourth Quarter of 2004

7. Gain Utility and ISO approvals necessary to proceed with a new line into San Diego.
8. Begin development of the STEP long-range plan (10+ years) using SSG-WI updated databases.

Current 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 plan for 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

California Short-term Upgrades (EOR rating increased to 8050 MW)

1. Hassayampa-N. Gila-Imperial Valley Series Capacitor Upgrade (2200 A normal), Palo Verde-Devers Series Capacitor Upgrade (2700 A normal), and Devers 500/230 kV #2.
2. Small West of Devers Upgrade (install reactor in limiting line or alternative project)
3. Add flow limiting device (i.e., phase shifter) at Imperial Valley.

Arizona Short-term Upgrades (EOR rating increased to 9300 MW)

4. Navajo-Crystal and Moenkopi-Eldorado Series Capacitor Upgrade or Perkins-Mead Series Capacitor Upgrade and Perkins Phase Shifter bypassing.

New Line between Arizona and California (assumes completion of the short-term upgrades)

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.