

## Southwest Transmission Expansion Planning (STEP) Planning Study Scope and Process

STEP will have two parallel processes, a coordination Process and a study process. Both are described below:

**Coordination Process** – This process would enable the sponsors of projects developed outside of the STEP study process to utilize the STEP forum to coordinate the development of their projects. To facilitate this coordination, STEP will make available to project sponsors a technical group that will provide technical input to guide the development of their projects. This technical group will not be responsible for conducting studies for the project but would be useful in providing guidance for independent study efforts.

**Study Process** - The remaining portion of this document discusses an open study process that STEP will conduct to develop a transmission expansion plan for the STEP area. It is intended that this study will be completed in parallel to other potential project development processes and should not impede the development of such projects. The study will consist of three distinct phases.

**Phase 1 – Short-term Solutions** - This phase of the study will focus on projects that can be implemented in a few years such as increasing the ratings of the series capacitors in the Southwest Power Link (SWPL). To gain an understanding of the use of the current system and the impact of new generation, historical data and calculated generation shift response factors will be combined to predict the impact of the new generation additions on existing facility loadings. Using this and other available information, short-term projects will be developed. The potential projects would then be refined using powerflow and stability simulations. The refined projects would then be analyzed from an economic perspective to determine whether they would be cost-effective additions to the grid.

**Phase 2 – Mid-term Solutions** - This phase of the study will examine the benefit of adding major new bulk transmission facilities such as a major new 500 kV line. Proposed projects will be refined using appropriate technical study tools and then evaluated from an economic perspective to determine whether they would be cost-effective additions to the grid.

**Phase 3 – Long-term Vision** - This phase of the study will develop a conceptual future transmission grid plan that will help ensure that the short-term and mid-term solutions will have long-term value and will work well together as part of the long-range plan. These projects would not be implemented until project sponsors are identified and the projects are determined to be necessary and cost effective at some future date.

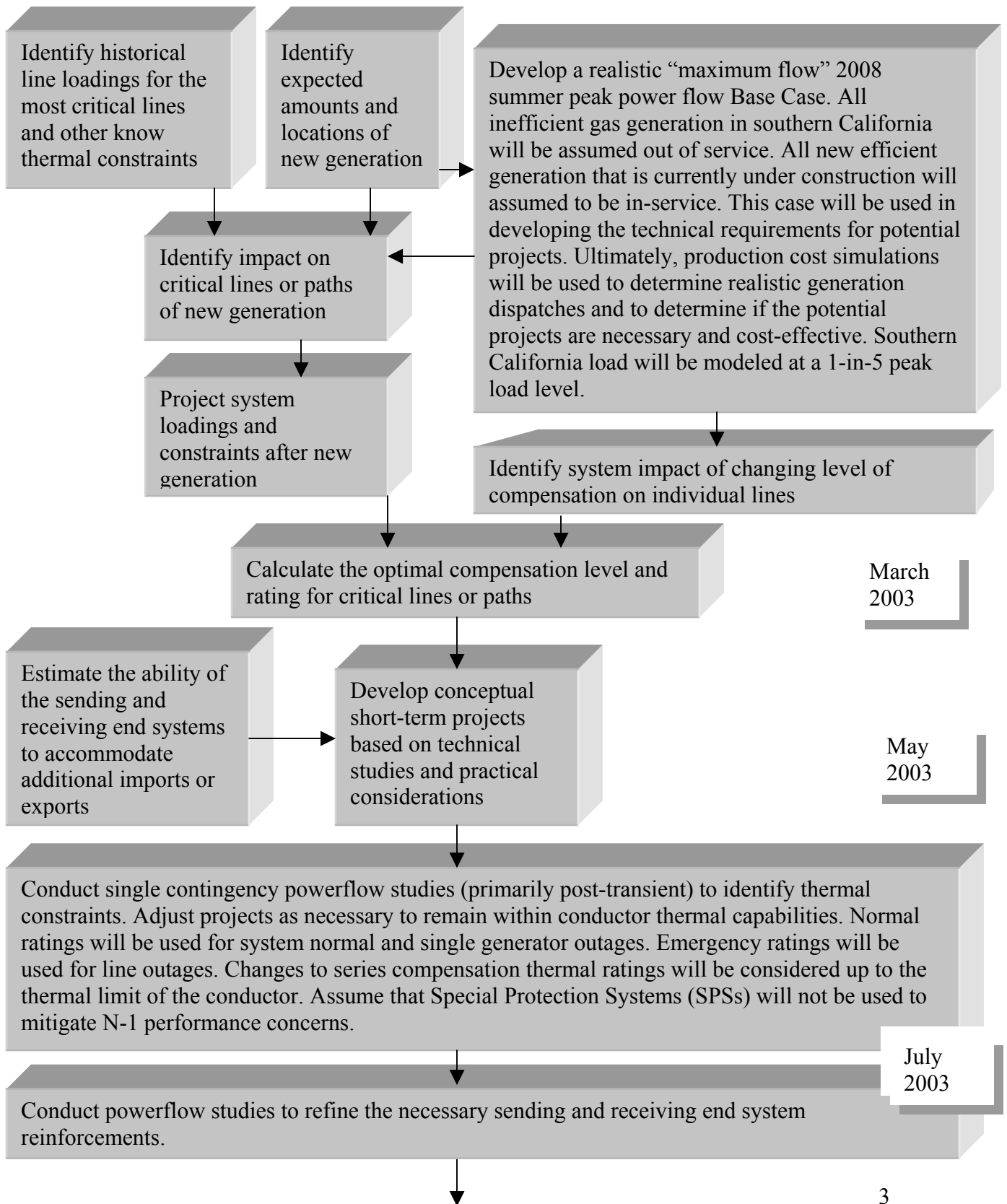
All applicable WECC Standards and policies will be followed. This work will be closely coordinated with the Seams Steering Group-Western Interconnection (SSG-WI) through

DRAFT March 4, 2003

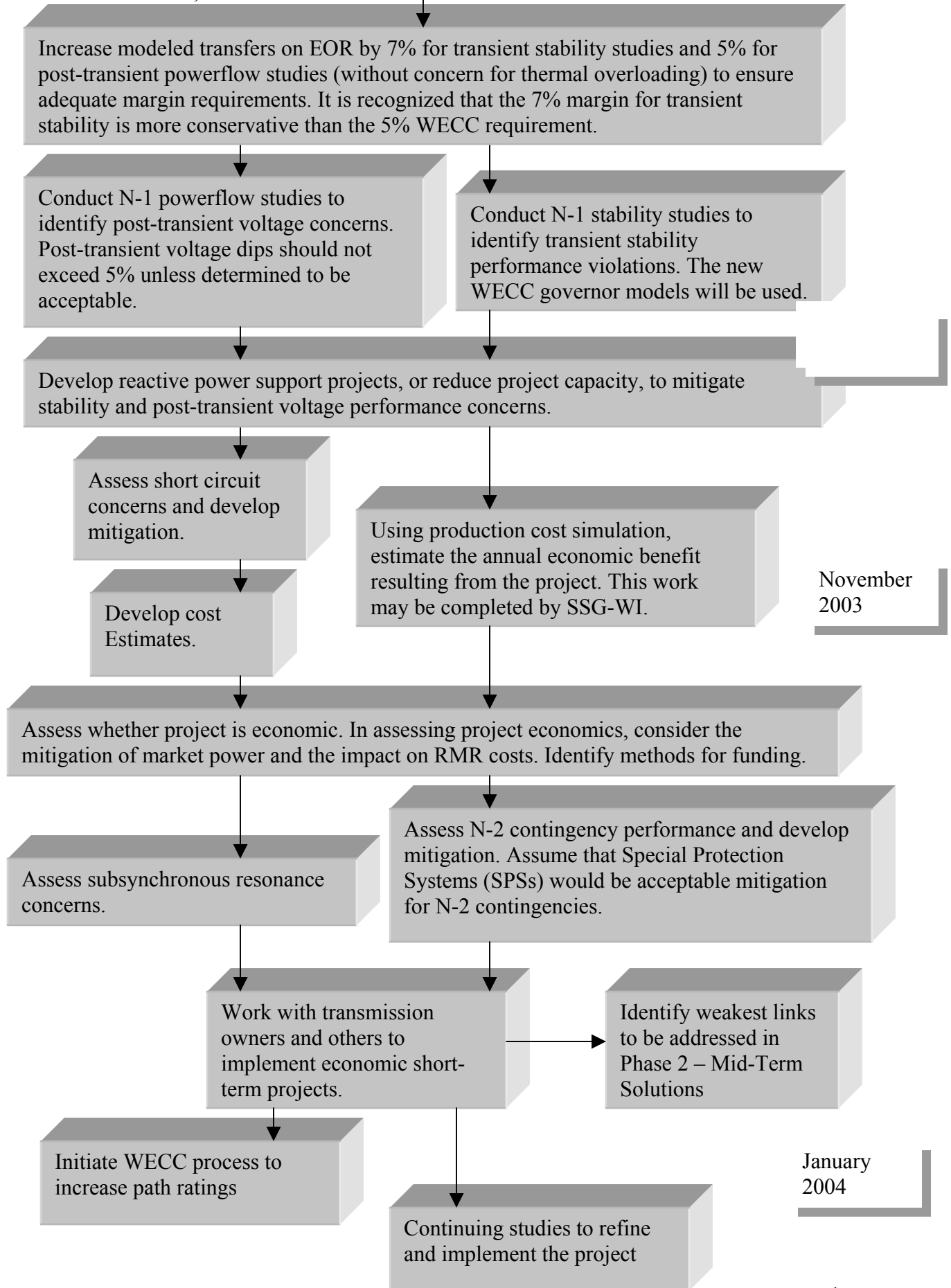
the SSG-WI Planning Work Group, with the owners of the East of River Transmission Facilities through the Western Arizona Transmission Systems (WATS) Task Force, and with the developers of generation in Mexico through the Border Generation Group. Regular updates on STEP's work will be provided in these forums.

Flow Charts showing the work to be completed in each phase are provided on the following pages. In addition, assumptions for critical generation additions are provided following the flow charts.

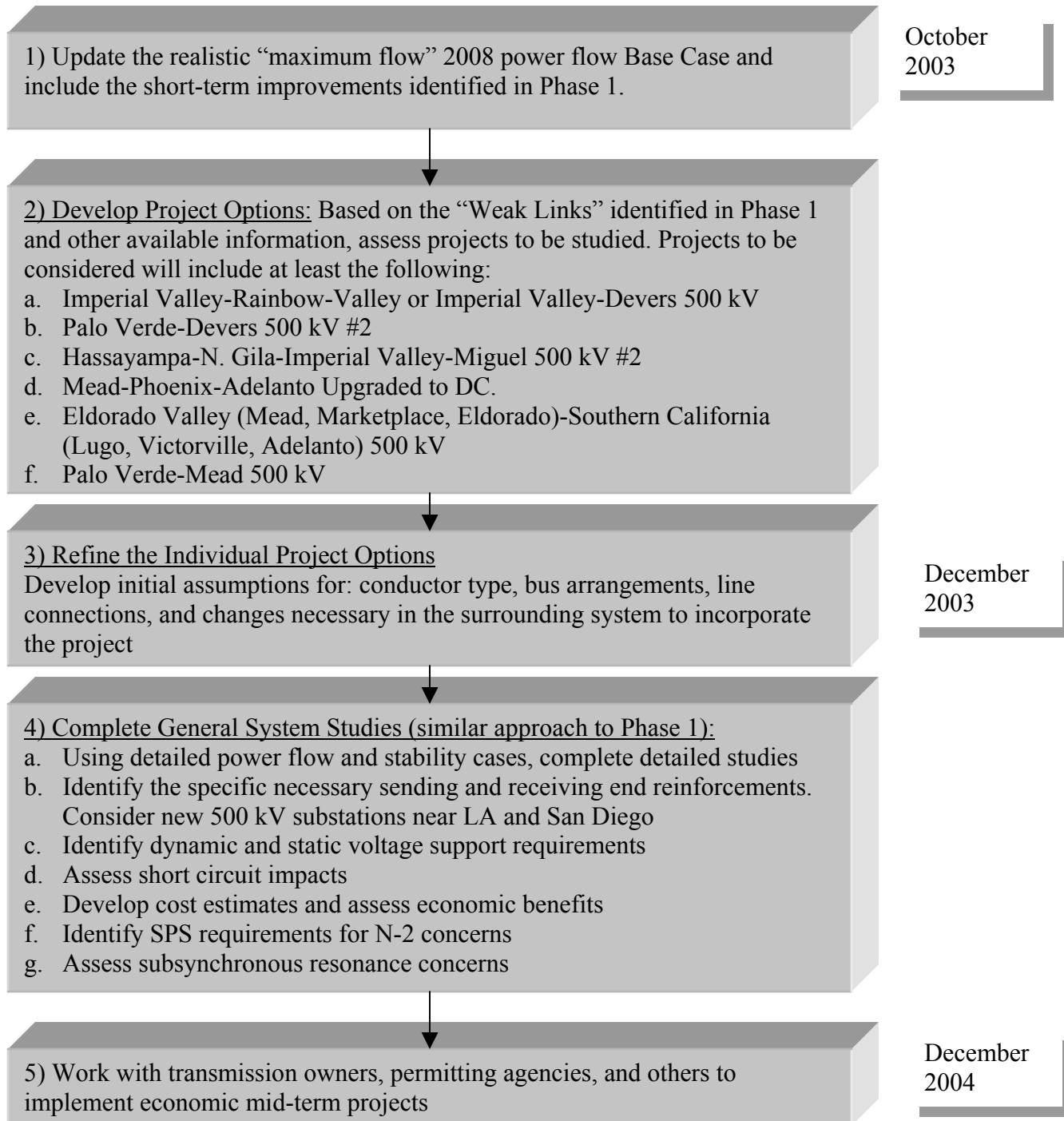
## Phase 1 - Short-Term (2005) Solutions



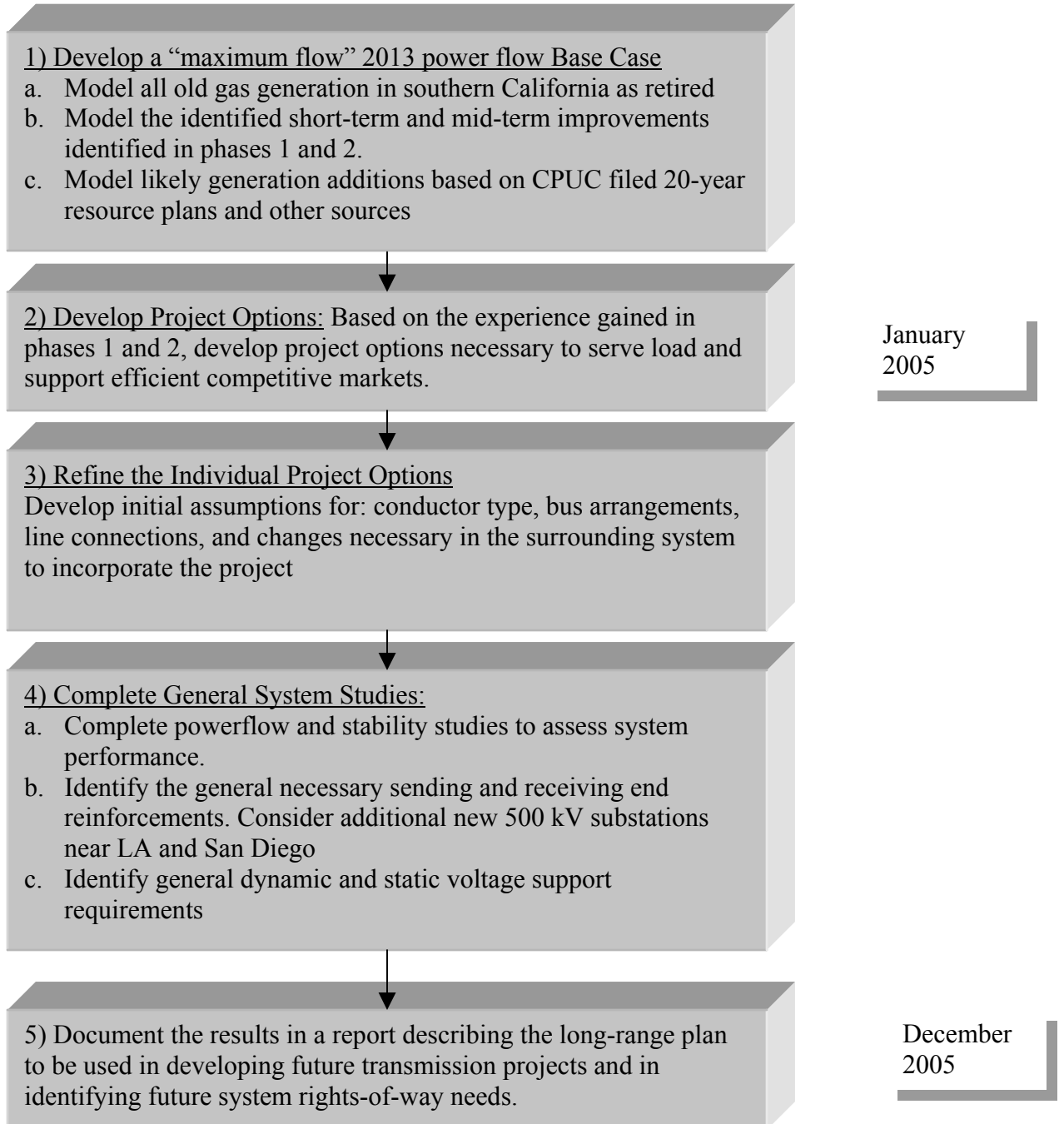
DRAFT March 4, 2003



## Phase 2 - Mid-Term (2008) Solutions



## Phase 3 - Long-Term (2013) Solutions



## Generation Addition Assumptions

The following new generation resources will be assumed to be in-service in the studies:

### Short-term and Mid-term Solution Cases

There are a large number of generating units planned for the STEP area. However, for the purposes of the near-term and mid-term studies, only the following plants, which have a very high probability of being completed, will be included in the studies. These plants total approximately 11,920 MW.

#### Arizona

6,100 MW of new generation will be modeled in western Arizona near Palo Verde and Gila Bend. The generation located near Palo Verde at Hassayampa includes:

- Red Hawk - 1000 MW in service.
- Arlington Valley - 600 MW in-service.
- Mesquite - 1250 MW in 2003
- Harquahala - 1170 MW in 2003.

In addition to the above, the following new plant is likely to be in-service in the nearby Gila Bend area:

- Panda power - 2080 MW in 2003

#### Nevada

Approximately 2340 MW of new generation is likely to be developed near Las Vegas, Nevada:

- Mirant – 550 MW in March of 2003.
- Gen West - 590 MW in April of 2004.
- Duke – 1200 MW (Currently on-hold but 70 % complete)

#### Mexico

Approximately 1660 MW of generation nearing completion in Mexico near Imperial Valley Substation:

- La Rosita I – 750 MW in 2003 (590 connected to La Rosita and 160 MW connected to Imperial Valley 230 kV)
- La Rosita II – 310 MW in 2003 (connected to Imperial Valley 230 kV)
- Sempra TDM - 600 MW in 2003 (connected to Imperial Valley 230 kV)

A total of 1070 MW will be connected to the 230 kV system at Imperial Valley and 590 MW will be connected to the La Rosita Substation in Mexico. The majority of the power from these Mexican power plants (1160 MW) is intended to supply electric demand in California.

### Southern California

The following new generators in Southern California (1820 MW) will be included in the study:

- Blythe #1 – 520 MW
- Pastoria Phase 1 – 750 MW
- High Desert – 550 MW

The recently added peaker plants in Southern California will not be modeled in the studies.

### Long-term Vision Cases

For the long-term solution generation assumptions, additional generation will be added to the simulations based on the recently prepared procurement plans that were completed by the Investor Owned utilities in southern California for the CPUC and other available sources.

## Work Assignments

The study work associated with this effort will be substantial and will require the collaborative efforts of a number of interested parties. Once the scope of work is refined, parties will be requested to volunteer to support the study effort. The study scope or schedule may need to be modified if insufficient resources are volunteered to complete the study work.