

CAISO Grid Project Review Information Requirements

Established in 1998 by the CAISO

This is a generic list of items that are needed to evaluate a transmission project. Not all items necessarily require responses for all projects. Engineering judgment should be used to determine how much information should be provided to support a specific project.

A. Description of Proposed Project

1. Provide a description of the proposed project including the approximate miles of line, supporting structure type, and substation bus arrangements.
2. Provide high-level substation bus arrangement one-lines for substations where changes would occur.
3. Provide maps showing the general routing of new or upgraded transmission lines.
4. Provide maps showing the general geographic location of new substations.
5. If the project is a phase or part of a larger project, describe the overall project.
6. Provide conceptual locations of new lines and/or stations.
7. If operating actions are proposed to address criteria violations, they should be clearly noted (for example, load dropping and transfer trip schemes).
8. Document model data for the project (line impedances, ratings, and shunt capacitor sizes).
9. Discuss special metering or protection requirements.
10. Discuss line separation and other common mode exposure items.

B. Detailed Cost Estimates

1. Specify major new equipment and cost (for example, 6 230 kV circuit breakers at \$100,000 each).
2. Specify land costs.
3. Describe the reason for any unusual variations from typical costs.

C. Project Schedule

1. Environmental and permitting processes.
2. Design.
3. Construction.

D. Key Issues

1. Land use restrictions.
2. Environmental concerns.
3. Other.

E. Background

1. Identify the problem to be solved (justification of the project need).
2. Provide area load projection and load growth trends.
3. Document the year when the project is required.
4. Discuss the project status as it pertains to the Western Interconnection Coordinated Transmission Planning Process.
5. Provide rationale for selecting the preferred project.

F. Base Case Assumptions *(This section should only be included if the base case substantially differs from the base cases developed as part of the annual Expansion Plan assessment; otherwise, just reference the source case.)*

1. Document the background of case (for example, developed from the WECC 2003 Heavy Summer and used in the 1998 PG&E annual system assessment).
2. List all other projects included in case that can influence study results.
3. Document load modeling assumptions (for example, 2003 summer peak with a 1 in 10 likelihood of occurring, constant MVA, and power factor).
4. Pre and post-project cases, draw files (if available), and switch files should be made available to the CAISO if requested.
5. Describe adherence to operating nomograms and other system requirements (SCIT, AC/DC, and Nomogram).
6. Generation assumptions (for example, dispatch, pump mode, and Northern CA hydro).

G. Study Criteria

1. If any criteria other than the WECC Standards and the NERC Planning Standards are used, they should be documented.
2. Clearly note any deviations from the WECC Standards or NERC Planning Standards.

H. Study Assumptions

1. Provide a list of key assumptions used in the analysis.
2. Document programs used (GE, PSAPAC, and GE-MAPS) (Limit this to any specialized analytic tools, and not the vendor of the standard power systems analysis tools. This will change only very rarely.)
3. Provide discussion of the analytic methods and important assumptions contained therein (for example, blocked governors and locked TCULs).

I. Documentation of Studies Conducted

1. Perform the necessary power flow, post-transient load flow, and stability analyses to verify that WECC, NERC, and/or other study criteria violations identified in A.1 have been satisfied.
2. Provide table(s) summarizing the outages considered and the effect on facilities in the area of interest.
3. Provide plots and/or tables showing contingency cases that resulted in criteria violations before or after the addition of the project, or its competitive alternatives.
4. List all sensitivity cases studied, and provide plots or tables showing the results from key cases.
5. Provide stability plots if stability studies were performed.
6. Provide QV and PV plots if these studies were performed.
7. Provide short circuit study results if these studies were performed.

J. Project Alternatives

1. List alternatives considered, including non-transmission alternatives.
2. If alternatives were dismissed, explain why.